# THE DEVELOPMENT OF A MULTIDIMENSIONAL SCALE TO MEASURE IRRATIONAL BELIEFS REGARDING FRUSTRATION INTOLERANCE

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# DECLARATION

I, Neil Harrington, declare that I am the author of this thesis. The research, of which this thesis is a record, has been conducted by myself and has not previously been submitted for any other degree or professional qualification.

# ACKNOWLEDGEMENTS

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# ABSTRACT

This research examines the construct of frustration intolerance. Although this is a central concept in Rational Emotive Behaviour Therapy (REBT), its structure and definition are unclear. The irrational beliefs that comprise frustration intolerance are hypothesised to form one of two major categories of psychological disturbance. However, the empirical evidence is sparse regarding the relationship of these beliefs with disturbance and with the other category of beliefs, those referring to self-worth. The concept of frustration intolerance and existing methods of assessment are discussed. A multidimensional measure, the Frustration-Discomfort Scale, was developed based on descriptions of beliefs in the literature and REBT theory. An exploratory factor analysis, using both a clinical and student population, was conducted and indicated a four-factor structure. These dimensions were labelled: (I) Comfort, involving intolerance of difficulties and hassles; (II) Emotional discomfort, involving intolerance of emotional distress; (III) Entitlement, involving intolerance of unfairness and frustrated gratification; and (IV) Achievement, involving intolerance of frustrated perfectionistic goals. A series of validation studies established that this measure had good reliability and validity. From these results, a simplified scale was developed and a confirmatory factor analysis conducted to test the hypothesised factor structure. This supported the four-factor solution and, along with further validation studies, strengthened the argument regarding the usefulness of a multidimensional measure. The results showed that the dimensions differed in their relationship with emotional disturbance: Using multiple regression analyses, entitlement was uniquely associated with anger, comfort with depression, and emotional discomfort with anxiety. These relationships remained significant when controlling for negative affect and self-esteem. Whilst self-esteem was correlated with depression and anxiety it had no significant association with anger. Similar differential relationships were found with a range of self-control problems. The relationship between frustration intolerance and student procrastination was examined, and indicated that comfort was a unique predictor of academic procrastination problems. Self-harming

behaviour was investigated using a structural equation modelling approach. This suggested that emotional discomfort and entitlement beliefs were important features of this problem in addition to the influence of low self-worth. Therapy engagement was also explored using clinical outcome data. Comfort was significantly correlated with increased therapy sessions and entitlement with increased therapy dropout. The implications for theory and clinical practice are discussed. Overall, the findings supported the REBT model of emotional disturbance and the role of separate categories of irrational belief.

# CHAPTER ONE

## THE CONCEPT OF FRUSTRATION INTOLERANCE

'It is tempting for me to overestimate the significance of discomfort anxiety and relate all forms of emotional disturbance to this problem. When... *must*urbatory views are not affirmed by reality...which is often the case in this frustrating world...(individuals) then usually conclude that they can't stand their own, others or the world's imperfections... In some respects, they seem to have low frustration tolerance as an aspect of virtually all their emotional disturbances...their self-downing, their hostility, and their self-pity.'

*Albert Ellis (1979a)*

### 1.1 INTRODUCTION

The ability to tolerate frustration and discomfort has been said to underlie many emotional and behavioural problems. It concerns the puzzle as to why people do things they wish to avoid, yet often fail to do things they profess to desire. It spans the range of human difficulty from the failure of everyday resolutions to severe psychological disturbance. The effects are often not dramatic but may well have longer-term consequences by undermining commitment and satisfaction with life. This research aims to investigate the Rational Emotive Behaviour Therapy (REBT) model of frustration-discomfort intolerance, and to measure and validate this concept.

### 1.2 OVERVIEW OF RATIONAL EMOTIVE BEHAVIOUR THERAPY

Whilst many therapeutic approaches refer to problems of self-control REBT is probably unique in distinguishing between two categories of psychological disturbance. The first is termed 'discomfort disturbance' and is based on beliefs regarding comfort, with psychological problems arising from a philosophy of low frustration tolerance (LFT).

The second is termed 'ego disturbance' and is based on beliefs that refer to the self, or more specifically global rating of the self as opposed to the acceptance of personal fallibility. Similar to many psychotherapeutic approaches, REBT initially placed most emphasis on the issues of self-worth. However, low frustration tolerance has developed into a central concept in REBT theory and become one of REBT's distinguishing features (Ellis, 1979b; 1980b). Indeed, it has been said that in fifty years Albert Ellis may be remembered more for the concept of low frustration tolerance than for REBT itself (DiGiuseppe, 1991a).

REBT is a member of the cognitive behavioural family of psychotherapies and was developed in the late 1950's by Albert Ellis (Ellis, 1994a). As with other cognitive approaches, it focuses on beliefs as being central in psychological disturbance (e.g. Yankura & Dryden, 1994 for review). REBT proposes that when personal goals are frustrated two types of beliefs may be activated, termed rational and irrational beliefs. These beliefs represent basic evaluative philosophies of the world rather than 'inferences', or interpretations of events. In this respect, they are similar to the distinction in Cognitive Therapy between core Schema and automatic thoughts (Beck, 1976; DiGiuseppe, 1996). The central features of irrational beliefs are that they are rigid, illogical, and block goal achievement. Essentially, irrational beliefs are based on rigid demands ('musts'), as opposed to rational beliefs based on flexible preferences or desires. Deriving from this central demanding belief are three other derivative irrational beliefs: Awfulising, low frustration tolerance, and self-rating.

REBT is also unique in distinguishing between 'healthy' and 'unhealthy' emotions (Dryden, 1995c), although the empirical evidence for this is disputed (Cramer, 1985; Cramer & Ellis, 1988). This proposes that for each unhealthy emotion there is a parallel healthy emotion, respectively: Anger-annoyance, depression-sadness, guilt-remorse, anxiety-concern, and shame-regret. It is normal for people to react to negative events with negative emotions, but whether these negative emotions are healthy (in promoting coping) or unhealthy (in blocking goals) depends on the beliefs involved. They differ in

that unhealthy emotions derive from demands and healthy emotions from preferences, rather than in the intensity of the emotion.

Frustration intolerance has a complex overlapping relationship with ego disturbance with disturbing events often activating both types of belief. The two types of belief also interact, since self-worth difficulties may lead to secondary problems of frustration intolerance, and vise versa. However, Ellis (1979a) points out that, for maximum explanatory usefulness, frustration intolerance requires to be separated from ego disturbance. However, frustration intolerance lacks adequate conceptualisation and definition and, as with ego disturbance, the cognitive content of frustration intolerance remains undetermined (Neenan & Dryden, 1999). This has meant that rather all encompassing terms are used, leading to a lack of differentiation between different facets of these concepts. This severely limits the usefulness of these concepts in explaining interactions between psychological disorders. For instance, there is evidence that some types of 'impulsive' problems, such as bulimia, self-harm, substance abuse, and compulsive shopping, are associated (Lacey & Evans, 1986). However, to describe the underlying process under the umbrella term 'low frustration tolerance' is to overlook the complexity of beliefs that may be involved.

The REBT concept of low frustration tolerance draws on pre-existing psychological and philosophical theories. As such, Ellis makes no claim as to the originality of REBT ideas and has been quite explicit in detailing philosophical and psychological influences (Yankura & Dryden, 1994). Therefore, to understand the concept of frustration intolerance it is important to explore its philosophical and historical background. Indeed, the failure to place psychological models and concepts within such context has been lamented (Power & Dalgleish, 1997).

## 1.3 PHILOSOPHICAL AND PSYCHODYNAMIC BACKGROUND

### 1.3.1 STOICISM

Many of the basic principles of REBT were adapted from ancient Greek and Roman philosophy (Ellis, 1994a). The three major philosophical schools of the Hellenistic period, Epicureans, Sceptics and Stoics, all agreed that the primary goal of life was peace of mind (Passmore, 1970). The later Stoics: Seneca, Epictetus and Marcus Aurelius, were particularly concerned with how in practice a person might achieve this state of mind and live the 'good life'. They argued that this depended on living in 'accordance with nature'. Nature was conceived as having the likeness of God and, since God was rational, the wise man would aim to rationally accept the world as it is, rather than how he commands it to be. Seneca presents numerous examples to illustrate the idea that whilst life consists of many unavoidable frustrations, our reactions to such frustrations are open to choice, and are therefore our responsibility. This choice depends on rationally accepting the aspects of reality that cannot be changed - 'the one alleviation for overwhelming evils is to endure and bow to necessity'.[1] Thus, emotional disturbance derives from the attempt to shoehorn reality into our own demands and it is this 'collision of a wish with unyielding reality' that is central to the Stoic conception of frustration intolerance (De Botton, 2000). In other words, passions such as anger are not 'irrational', in that they can be understood as resulting from a conflict of a desire with reality, but are irrational in the belief that reality will inevitably fulfil this desire. In contrast, the ability to endure frustration comes from the realisation that every wish cannot be gratified. That is, we should accept that people are imperfect and the world one of change and uncertainty; an attitude summarised by Epictetus's aphorism ' it is not things that upset people but rather ideas about things'.[2] Like REBT, Stoicism assumes

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[1] Seneca, De Ira, 16, 1
[2] Encheiridon, trans. Mason, 16, 7

that these beliefs can be expressed in propositional statements, with which the person has to agree before they can lead to action.

As such, this appears to advocate a hair shirt philosophy, and passive endurance of suffering, with which stoicism is sometimes mistakenly associated. However, there is another important side to the stoic approach to frustration. Since man is also part of nature and thus rational, he has a choice between what can, and what cannot, be changed. Such a choice may be guided by reason and knowledge regarding the world. Although ultimately, Epictetus argues, we can only control our 'own doings', which are our beliefs, perceptions and actions, and not the external world or other people. Nevertheless, this does not mean that we should avoid trying to influence events, but rather that we should not allow the success or failure of these attempts to affect our peace of mind. Thus, Zeno recognised that it would be sensible to *prefer* wealth rather than poverty, but happiness should not be dependent on either condition. Indeed, Seneca argues that it is as irrational to passively accept frustrations that can be avoided as the refusal to accept harsh reality.[3]

Incorrectly, it is also sometimes thought that Stoicism aimed to eliminate emotions and desire. This is due to a confusion regarding the Greek word for 'freedom from passion', *apatheia*. *Pathos* is not the same as the English word emotion, for which there is no ancient Greek equivalent. Rather, *Pathos* signifies emotional disturbance/disease resulting from the aberration of reason. Thus, the aim of Stoicism is not freedom from emotion but from emotional disturbance, and only the latter is viewed as irrational. Indeed there are, in addition to desire, other 'good emotions' such as 'well-reasoned avoidance' and joy. Nevertheless, it is true that the Stoic ideal was the elimination of 'passion', not simply one of rational control and reduced intensity as Plato had proposed. However, the observation that 'passion' can sometimes outweigh reason led Zeno to

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[3] Seneca, De Ira, 16, 7

suggest that both rational and irrational beliefs continue to coexist even when intellectual understanding had been achieved.

Peace of mind did not mean the avoidance of frustration or discomfort. Indeed some Stoics, such as Posidonius, argued that toleration of frustration was required in order to strengthen and habituate the mind against the passions. Others emphasised that to gain philosophical wisdom it was necessary to change behaviour, which often required discomfort and deprivation. For example, Seneca gives the example that by enduring hardship for a few days one realises a situation is not as awful as feared. Similarly, Epictetus argues that such training requires constant hard work and practice in going against habitual patterns of thought and behaviour. This is in contrast with the Epicureans who equated happiness with freedom from suffering, fear, and discomfort. Likewise, Aristotle proposed that man should seek *eudaemonia*, which translates more accurately as 'freedom from troubles' rather than 'happiness'. Nevertheless, whilst Stoic philosophers did not advocated the renunciation of earthly pleasures and desires such pursuits were not viewed as of central importance. This follows from the Stoic belief that external events were a function of fate and providence. Thus, while man has a choice in his reaction to events, the wise attitude to the slings and arrows of life was that of 'indifference' and enabling 'the mind to adapt itself to whatever comes to pass'. In general a simple life was encouraged, and rather than pursing worldly goals the rule was 'not to lead events, but to follow them'.[4] Similarities between Stoicism and Eastern thinking, such as Buddhism, are not coincidental since these ideas did influence Asia Minor during this period.

### 1.3.2 NIETZSCHE

Stoicism has echoes down to the present time but, of modern philosophers, perhaps Nietzsche has best developed and articulated these ideas, and much of his writing is

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[4] Seneca, letters, XVIII

relevant to the concept of frustration tolerance. To some extent, Nietzsche viewed himself as a Stoic and indeed one of his central ideas, that of the eternal recurrence, derives partly from stoicism. '.... My formula for greatness in a human being is *amor fati*: that one wants nothing to be other than it is, not in the future, not in the past, not in all eternity [5]. As encapsulated by this quotation, this idea is an affirmation and acceptance of life, including suffering. Whilst Nietzsche does not extol suffering he does recognise that hardship is essential to those who desire fulfilment. Initially however, he had been much influenced by the work of Schopenhauer. In 'The World as Will and Representation' Schopenhauer described the world, 'the worst of all possible worlds', as a blind struggle for survival leading to conflict, suffering, boredom and procreation in an endless cycle. Desires, since they could never be fully satisfied, inevitably resulted in only fleeting pleasure. Fulfilment was like 'the alms thrown to a beggar, that keeps him alive today in order that his misery may be prolonged tomorrow....' He argues for withdrawal from the world into one of compassion, aesthetic detachment, the avoidance of conflict and strife, and an acceptance of the futility of change. Above all, he recommends a renunciation of desire and the self, following which 'the peace which we were always seeking, but always fled from us on the former path of the desires, comes to us....It is the painless state which Epicurus prized as the highest good....'[6]

Thus, for Schopenhauer the pursuit of pleasure is not worth the frustration and distress that it brings. However, Nietzsche eventually considered that this philosophy was symptomatic of neurosis, or what he termed *decadence*. He argued the primary psychological motivation was power, not pleasure or peace of mind dependent on the absence of frustration and discomfort. Nietzsche uses the term 'will to power' to describe this psychological concept, which he contrasts with the pursuit of pleasure. This motivation is instrumental in the process of 'self-overcoming', which enables an individual to become the master of experience, not its victim. Although Nietzsche was

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[5] Ecco Homo, trans. Hollingdale, 10
[6] The Will and Representation, Vol. I

not a proponent of hedonism, since he conceived happiness as necessarily involving suffering and hardship, 'self-overcoming' did require a *Dionysian* embracing of life. Indeed, Nietzsche urges a seeking out difficulty and discomfort, '....live dangerously! Build your cities on the slopes of Vesuvius! Send out your ships to unexplored seas'.[7] Pleasure and pain are 'so intertwined that whoever *wants* as much as possible of the one *must* have as much as possible of the other....At least the stoics believed that this is how things are, and were consistent when they also desired as little pleasure as possible in order to derive as little pain as possible from life...'.[8]

Therefore, although Nietzsche is reinstating Stoic philosophy there is a distinctly different focus. As noted above, there are two approaches to frustration: the endurance of unavoidable events and the attempt to change events that may be changed. Compared to the Stoics, Nietzsche emphasises the second of these options. However, both options involve the toleration of frustration and discomfort, since changing frustrating events will involve effort, discomfort, and often result in further difficulties. Above all, the motivation to overcome obstacles usually requires some emotional commitment, and the need to harness and tolerate feelings without allowing them to lead to disturbance. This relates to some apparent contradictions in Nietzsche's work. For example, he condemns attempts to control the instincts, ''to have to combat one's instincts – that is the formula for *decadence*..., happiness and instinct are one'.[9] On the other hand, he also argues that one should '*not* react immediately to a stimulus, but to have the restraining, stock-taking instincts in one's control'.[10] Thus, *'for Nietzsche the good man is the passionate man who is the master of his passions'* (Kaufmann, 1974).

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[7] The Gay Science, trans. Nauckhoff, 23
[8] The Gay Science, trans. Nauckhoff, 12
[9] Twilight of the Idols, trans. Hollingdale, 2, 11
[10] Twilight of the Idols, trans. Hollingdale, 9, 6

However, Nietzsche points out that 'the overcoming of [passion] itself is only a means, not a goal', [11] and he was particularly concerned with how to give meaning to life in a world in which religious values have been lost. He often answers this by referring to individuals who have given purpose to existence by 'sublimating' the will to power towards a creative involvement in life. These qualities include courage, truthfulness, and loyalty. Nietzsche is clear that such creativity does not come cheap, but requires hardship and suffering - 'let us remain hard, we last of the Stoics'.[12] He emphasises the importance of having a purpose and persisting towards this, ' the secret of my happiness: a yes, a no, a straight line, a goal...'.[13] Also that growth is bound up with the toleration of the frustration and discomfort involved; encapsulated by his well known aphorism, 'what does not kill me makes me stronger'.[14] Whilst, Nietzsche is particularly scathing towards the idea of contented happiness, describing it as the 'contemptible sort of well-being dreamed of by shopkeepers...'.[15], he also recognises how frustration can lead to destructive emotions and beliefs as well as to creativity. In this regard, he particularly singles out resentment (*ressentiment*) and pity. For example, he argues that for the underdog in a position of frustrated subservience one method of gaining power is to encourage a reversal of values, so that weakness becomes strength. In opposition to the desire to overcome adversity and exercise the will that he associated with fulfilment, he suggests this encourages self-pity and undermines self-determination.

### 1.3.4 UTILITARIANISM

Bentham's idea of hedonistic calculus is a component of REBT's general recommendations for psychological health and the concept of frustration intolerance[16]. This is based on the Utilitarian philosophical principle that people are motivated to

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[11] Human, All Too Human, trans. Hollingdale, The Wanderer and His Shadow, 53
[12] Beyond Good and Evil, trans. Hollingdale, 227
[13] Twilight of the Idols, trans. Hollingdale, 1, 14
[14] Twilight of the Idols, trans. Hollingdale, 1, 8
[15] Twilight of the Idols, trans. Hollingdale, 9, 38
[16] Introduction to the Principles of Morals and Legislation

increase pleasure and avoid pain, and goals can be evaluated on the balance of these outcomes. Thus, reason does not control desire but rather chooses which desires are best pursued. There are a number of problems with this, in particular it is debatable whether people are motivated by pleasure or, at least, just pleasure. Although, the narrow model of rational choice attempts to overcome these objections by stipulating that preferences should be those based on well-informed and rational choice under ideal conditions, there are other difficulties. Thus, people often do have conflicting goals, and may prefer to satisfy short-term pleasures rather than a long-term reward. Thus, Ellis (1979a) argues that although smoking is unhealthy it is a personal preference and therefore not, necessarily, irrational. The difficulty with this view is that preferences may be based on false information. For example, a person may mistakenly believe that cigarettes reduce stress. Furthermore, since is a criterion for wellbeing is defined as satisfying preferences this tends to emphasise short term and easily achievable goals. As Nietzsche pointed out, few great achievements could have been based on such simple hedonistic calculus. The wide model of rational resolves this by proposing that satisfaction consists in the person pursuing what they want, which may include short-term pleasure and a range of possible desires. Therefore, it assumes that rational decisions are 'bounded', in that individuals lack information and may not use detailed cost-benefit calculations. However, whilst such decisions are 'rational' in the sense of reflecting functional choices longer-term consequences may be very maladaptive. Thus, an explanation is required for the failure of self-control when individuals are aware of negative consequences and desire to avoid these.

### 1.3.5 PSYCHODYNAMIC PERSPECTIVES

Frustration is a central developmental concept in Freudian theory, whereby the blocking of a child's need for immediate gratification transforms the pleasure principle into the reality principle. Later, frustration can lead to regression to earlier developmental stages and the deployment of psychological defences, generally termed repression. The capacity to tolerate frustration and associated affect is included in the overall concept of

'ego strength'. However, it was the Neo-Freudian theories of Horney (1950) and Adler (1927) that most influenced Ellis's ideas. Horney viewed the discrepancy between the 'real' and the 'ideal' self as being at the root of neurosis. This resulted in a 'central inner conflict' between 'pride', based on an idealised image, and the persons actual self. According to Horney, the drive to actualise this ideal self led to neurotic demands, or 'claims'. The difference between these 'compulsive' claims and normal self-actualisation she summarised as 'I want' compared to 'I must'. The greater the importance of the striving the more intense the claim, and stronger the reaction when the claim is frustrated. Horney characterises neurotic claims as being rigid, denying reality and having absolute and perfectionistic goals. She notes that whilst wishes are reasonable, 'claims are irrational because they assume a right, a title, which in reality does not exist', and thus it 'seems advisable to speak simply of irrational or neurotic claims'.[17] Horney identified the essential characteristics of claims as being unrealistic, rigid, and absolute, relative to their social adaptiveness. This description closely corresponds to the definition of irrational beliefs in REBT.

This 'tyranny of the shoulds' is directed both towards the self and towards the outside world. Horney's examples of externally directed claims closely match many beliefs that REBT considers characteristic of low frustration tolerance. She suggests that these often involve beliefs 'of life being easy and without suffering', and that 'things are coming to him *without his making adequate efforts*'. Horney's discussion of these beliefs suggests how they may interlock and overlap with one another. In particular, she describes the interaction between egocentric entitlement, vindictiveness and inertia, summarised in the belief 'the world should be at my service and I should not be bothered'. Thus, unwillingness to make any effort can follow from entitlement beliefs - since life should be so arranged to remove effort and trouble. Horney uses the analogy of an individual who, in expectation of a handsome inheritance, puts all his energy into pursuing this and consequently invests little interest or effort into everyday life. Furthermore, if

[17] This and subsequent quotations from Neurosis and Human Growth (1952)

entitlements are frustrated then this implies unfairness and injustice. Therefore hardships, because they are perceived to be unfair, become more difficult to tolerate and result in resentment and anger.

Horney proposed three methods by which individuals attempt to cope with the central inner conflict. First, a 'self-effacing solution' whereby the real self is devalued, and is associated with self-condemnation, needs for affection, support and safety. Secondly, an 'expansive solution' whereby the individual overvalues the ideal self and attempts to master the outside world and other people. This solution is sub-divided into three: a grandiose narcissistic group with illusionary high self-esteem, a perfectionistic group, and an arrogant vindictive group. Lastly, there is a 'resigned solution' where the person seeks freedom from conflict and inner tension by restricting and withdrawing from life. This solution is associated with claims that 'life should be easy, painless, and effortless'. It is also related to lack of engagement in therapy due to both a lack of personal goals, aversion to change, and the expectation that overcoming problems should be easy and undertaken by the therapist. Thus, whilst aiming to protect the ideal self, this elaborate system of avoidance eventually blocks self-actualisation. Freud had argued that such compulsive neurotic rigidity related back to an infantile intolerance of frustration based on the pleasure principle. However, Horney moves from this biological based concept to a socially determined neurotic drive for mastery and superiority. As with Alfred Adler, Horney's work has clear antecedents in the philosophy of Nietzsche who described the consequences of frustrated mastery as resentment and bitterness. Similarly, Horney describes the vindictiveness, anger and dissatisfaction with the world that results from self-hatred and the percieved unfairness of past frustration and suffering.

### 1.3.6 SUMMARY

Many key REBT concepts forming the basis of frustration intolerance can be discerned in this brief review: The Stoic philosophical tradition describes the failure to tolerate the discrepancy between the ideal and reality as central to disturbance. It defines

'irrationality' as failing to accept this discrepancy. Nietzsche argues, like REBT, that strong emotions are not necessarily disturbed emotions and may serve an important role in the pursuit of goals. A similar distinction between the real and the ideal is central to Horney's psychodynamic theory and she highlights how the frustration of 'shoulds' and entitlement beliefs can result in resentment, withdrawal, and disturbance. However, whilst departing from classical Freudian theory in some respects, she is still very much within the psychodynamic tradition. Behavioural change is dismissed as superficial and inconsequential to the real task of fostering insight regarding inner conflicts. The cause of disorders resides in disturbed child-parent relationships, with a failure of genuine affection leading to 'basic anxiety' and a distortion of the self-image. The associated 'painful and unbearable feelings' are defended against because they are incompatible with the self-image. Thus, Horney conceptualises emotional problems as deriving from the self, with frustrating events causing disturbance because they conflict with self-beliefs. The next section considers behavioral approaches to frustration intolerance that emerged from these psychodynamic foundations.

## 1.4 BEHAVIOURAL RESEARCH

### 1.4.1 EARLY RESEARCH AND AMSEL'S THEORY

Whilst the term frustration tolerance had been employed both in everyday use and in Freudian theory Rosenzweig (1938) was one of the first to specifically explore this concept. He classified reactions to frustration as extrapunitive (against others), intrapunitive (against oneself), or impunitive (frustration ignored). These reactions were aimed at defending the ego or satisfying a frustrated need. Frustration itself was defined as an obstacle preventing satisfaction of a need, and frustration tolerance as the ability to withstand a frustrating situation without 'distorting reality'. He considered frustration tolerance to be a global personality trait, with its influence varying between situations and increasing with age. Rosenzweig speculated that 'insufficient frustration tolerance' ('immaturity') would develop from spoiling, and 'low frustration tolerance'

('complexes') from overwhelming frustration in childhood. Like William James (1890), who wrote that the faculty of using effort to overcome difficulty required continual exercise, he suggests that such problems might be treated by gradual exposure to tolerable doses of frustration.

At the same time, Dollard and his associates in the Yale group (1939) were exploring the association between aggression and frustration. Defining frustration as external events blocking goal achievement, rather than the emotional reaction to such events, they proposed that 'frustration always leads to some form of aggression'. The obvious objection to early theories of frustration was that this frequently does not result in aggression, and that attributions of unfairness, deprivation, or intent are additionally required (Averill, 1983). Another criticism of these early theories of frustration tolerance was the lack of detailed behavioural analysis (Lawson, 1965). However, Maier (1949) used experimental methods, investigating the behaviour of rats using the Lashley jumping stand. When these rats, trained under frustrating reinforcement schedules, were tested using changed response conditions Maier found that they were less adaptable and continued with stereotyped 'fixated' responses. These results have parallels with the 'experimental neurosis' reported by Pavlov (1927) in which the behaviour of animals was disrupted with difficult response discriminations.

Dollard and Miller (1950) attempted a more general analysis by combining psychodynamic theory with Hull's learning theory, drawing a parallel between neurotic conflicts and the approach-avoidance behaviour observed in animal experiments (Miller, 1944). Likewise, Brown and Farber (1951) also explored the concept of frustration using Hull's learning theory, defining frustration as a 'hypothetical construct' functioning as a drive state. They suggested that conflict between opposing responses tended to increase drive and to produce internal 'affective' stimuli. Amsel's research (1958) extended this by proposing that the failure to receive a reward after having previously been rewarded ('frustrative non-reward') led to an innate aversive state. This emotional response disrupted goal performance and led to avoidance, but also acted as a stimulus that could

be conditioned to further responding ('fractional anticipatory frustration'). With continued behaviour under conditions of frustration, this emotional response becomes a conditioned stimulus for an 'anticipatory goal reaction'. Since this goal reaction is in opposition to the aversive frustration stimuli it therefore, by a process of counterconditioning, reduces the aversiveness of the frustration and its disruptive effects. Furthermore, the frustration stimuli gradually elicit continued responding, explaining why responses following partial reinforcement are more resistant to extinction compared to continuous reinforcement (Mackintosh, 1974). That is, the feelings of frustration act as cues to remind the animal to keep responding. However, the aversiveness of the anticipatory frustration eventually increases until the tolerance threshold is passed, leading to avoidance and reduction in frustration (Amsel, 1967). This theory was elaborated by Wong who suggested that the tolerance threshold partly depended on prior reinforcement of trial and error goal orientation or 'try strategy' (Wong & Amsel, 1976).

Amsel's general theory of persistence (see Amsel, 1990 for review) proposes that impulsiveness can be attributed to a history of inconsistent rewards and punishments. This inconsistency leads to an increased sensitivity to the disruptive arousal resulting from frustration or conflict and a failure to 'tolerate', or countercondition, to these stimuli. His general theory predicts that training to respond under one frustration will transfer to other types of frustration and increase self-control by reducing the aversiveness of effort and frustration (Amsel, 1967). Many studies support the acquisition of generalised frustration tolerance. Thus, raising the required number of responses, strength of response, or reward delay has been found to increase subsequent persistence in later extinction trials (Wong et al., 1974). Response persistence also transferred to different behaviours, for instance in rats from speed of running to lever pressing (McCuller, Wong, & Amsel, 1976). These, and other studies suggest that frustrative non-reward has similar characteristics to punishment (Wagner, 1966). Indeed, Gray (1987) has theorised that resistance to extinction after partial response schedules is based on the process of tolerance to aversive events. He equates the effects of frustration

with that of fear, or more precisely, that frustrative non-reward is functionally equivalent to punishment and that relief from punishment is equivalent to reward. Gray suggests that avoidance behaviour is maintained by the secondary stimuli, 'safety signals', that are associated with successful non-punishment.

An alternative explanation of these results is the secondary reward theory of Eisenberger, which proposes the sensation of response effort is conditioned to secondary reward (see Eisenberger, 1992 for review). Eisenberger argues from his series of studies that this instrumental theory is more able to account for differences in transfer effects and stimulus control than habituation to frustration. Rather he suggests that all forms of effort, physical, mental, as well as that required to adapt to aversive situations, are discomforting and that self-control involves a choice to 'tolerate one or more costs (delay, effort, punishment) to obtain reinforcement' (Eisenberger et al., 1989). However, both theories agree that rewarded high effort increases persistence in the presence of frustration and this is dependent on active responding rather than just waiting for rewards. This is consistent with findings such as Adelman and Maatsch (1956) that indicated resistance to extinction is strongest when the animal can make a response to the frustration rather than just remaining in the situation.

There is also strong evidence that people differ in their industriousness (Eisenberger, 1992) and that this behaviour exhibits moderate stability between situations and over time (Eisenberger & Shank, 1985). Eisenberger argues that enduring differences in industriousness are related to the degree that past effort has been reinforced. For example, Eisenberger et al. (1985) found in children that if high effort was rewarded this increased the choice of high effort large rewards over low effort small rewards in a variety of other tasks. For students, effort training increased the quality and length of essays (Eisenberger, Masterson, & McDermitt, 1982). It also increased working time on frustrating tasks such as unsolvable anagrams, and reduced the temptation to take the easier option by cheating on mathematical problems (Eisenberger & Masterson, 1983). Learned industriousness was initially conceived as being on a dimension with learned

helplessness (Eisenberger, Park, & Frank, 1976). Learned helplessness theory derives from the work of Maier using inescapable shook (Seligman & Maier, 1967), which proposed that uncontrollable non-contingent aversive stimulation led to passivity and emotional disturbance, analogous to human depressed behaviour (Seligman, 1975).

### 1.4.2 RADICAL BEHAVIOURISM

The radical behavioural literature has eschewed hypothetical concepts such as cognitions or internal stimuli and has focused on a comparatively narrow aspect of frustration tolerance. That is, self-control as the choice of a larger more delayed reinforcer over a smaller less delayed reinforcer, with impulsiveness defined as the opposite (Ainslie, 1975: Rachlin & Green, 1972). Certainly, by this criteria pigeons and rats can be said to be impulsive, and choose the immediate reinforcer even when overall frequencies are balanced (Logue & Pena-Correal, 1984). In contrast, humans tend towards self-control choosing the pattern of reinforcement that maximises the reinforcement outcome (Flora & Pavlik, 1992). Consistent impulsive responding has only been found with the termination of strong aversive noise (Navarick, 1982). There also seems to be a marked difference between positive and negative reinforcers, with significantly less self-control shown with negative compared to positive reinforcers (Takahashi & Fujihara, 1995). Time is also an important variable, and a consistent finding is that of preference reversal. That is the tendency to reverse the choice the nearer to the smaller reinforcer the choice is made (Ainslie & Herrnstein, 1981). However, there are often large individual differences depending on the type of reinforcer, for instance food can lead to more impulsiveness and extreme variation in control (Forzano & Corry, 1998).

Rachlin (1974) and Ainslie (1975) proposed that the choice between rewards could be described by a mathematical utility function, the hyperbolic decay curve. As in economic theory, behavioural outcomes can be determined by the examining the decay of rewards over time. Nevertheless, given this the question remains, how do humans choose self-control. Rachlin's (1995) updated theory, termed 'teleological

behaviourism', argues that self-control results from commitment to external constraints. Thereby, the cost of deviating from self-control is increased, for example by leaving cigarettes somewhere difficult to access. However, since much self-control is achieved without such obvious external commitment Rachlin proposes that it is the increased patterning of reinforcement that constitutes the main constraint. In other words, as we become committed to a wider pattern of behaviour it becomes more costly to interrupt. Lack of self-control is therefore the choice of individual acts over complex patterns, whereas self-control lies in the development of such patterns. For example, eating a jam cake compared to commitment to a healthy life style. There are a number of problems with this theory of self-control. First, whilst patterns may help to maintain self-control they initially still need to develop from single acts. Second, it is unclear how acts are distinguished from patterns, for example an alcoholic lifestyle could be said to be a complex pattern and abstaining from a drink a single event. Lastly, a frequent self-control problem is the failure to persist with complex patterns such as long-term dieting.

### 1.4.3 SUMMARY

Behavioural research has described enduring patterns of response to frustration, and Amsel suggested that the mechanism of frustrative non-reward was a 'candidate for the learning theory counterpart of "frustration tolerance" (Amsel, 1962). Nevertheless, simply equating frustration with disturbance was clearly mistaken, and evidence indicated that helplessness in both animals and humans was not consistently related to non-contingency of reinforcement, and equating depression with low effort reinforcement or non-contingency was simplistic. In addition, helplessness theory failed to explain the association of low self-esteem with depressed mood. Overall, it became clear that people do not merely respond to environmental contingencies, but self-regulate by setting goals and following rules. Whilst behavioural strategies are involved in self-control these are underpinned by beliefs regarding personal goals or self-worth. It is these aspects that will be considered next.

## 1.5 SOCIAL COGNITION AND SELF-REGULATION

### 1.5.1 DELAY OF GRATIFICATION

Mischel's research with children used an experimental paradigm, a 'self-imposed delay of gratification', which mirrored the behavioral work on animals (see Mischel, 1996 for review). Results indicated that uncertainty of delayed rewards increased preference for immediate rewards, and larger values of delayed rewards reduced this preference (Mischel & Mettzer, 1962). Initial expectations, based on psychoanalytic theory, were that being able to see and anticipate the delayed but larger reward would enable children to postpone gratification. However, the opposite was found (Mischel & Ebbesen, 1970). Indeed, it was observed that the more the child could distract themselves from future desires the higher the resistance to temptation (Mischel, Ebbesen, & Zeiss, 1972).

Mischel theorised that exposure to the desired reward increased frustration and that 'willpower' in this situation is maintained by strategies that reduce frustrative arousal and make waiting less aversive. This could be achieved by other cognitive strategies apart from distraction, and it was found that abstract representations of the reward, such as mental pictures or slides, also enabled greater resistance to temptation (Mischel & Baker, 1975; Moore, Mischel & Zeiss, 1976). He argues that willpower, rather than reflecting 'Stoic' endurance, is the attentional ability to convert aversive delay to a situation that is more tolerable. Thus, there is a balance between using images to guide intention towards long-term goals and avoiding these images becoming too arousing and intolerably frustrating.

Mischel's studies also indicated large individual differences between children in the ability to delay gratification. Longitudinal studies showed that the children who had difficulty in delaying gratification as pre-schoolers were rated as having less ability to tolerate frustration, delay gratification, cope with stress, or use methods of self-control when adolescents. There was also a significant correlation between later Scholastic Test

Aptitude scores and pre-school delay of gratification. Furthermore, the experimental condition diagnostic of later problems was the most frustrating situation, where the rewards were exposed and no coping strategies suggested (Shoda, Mischel, & Peake, 1990). In addition, children with poor delay times tended to have higher levels of physical and verbal aggression, suggesting a link between different types of frustration tolerance (Rodriguez et al., 1998).

Self-control and persistence has also been related to self-efficacy, that is expectations regarding successful performance (Bandura, 1997). For instance, Mischel and Staub (1965) found that children with high scores on a measure of generalised self-efficacy were more likely to choose a difficult problem and large reward, rather than an immediate small reward. The ability to disengage or persist at goals has also been linked with differences in self-efficacy (Carver & Scheier, 2000). From this theoretical perspective failures in self-regulation result from ineffective techniques and planning which depend on self-efficacy beliefs.

### 1.5.2 NEGATIVE AFFECT

The relationship between affect and self-control is an important component of a number of theories. Thus, Mishel's (1974) theory proposes a two-stage process for the delay of gratification. First, the choice between preferred options, dependent on the value of rewards and likelihood of success. Secondly, perseverance with this choice dependent on coping with the aversiveness of frustration. Indeed, Berkowitz (1962) in his criticism of Dollard's study had previously noted the importance of affect in frustration tolerance. He suggested that affective states mediated frustration and, in his reformulation of the frustration-aggression hypothesis, argued that frustrations only produced aggression 'to the degree that they arouse negative affect' (Berkowitz, 1989). He notes that both physical and psychological discomfort can increase aggression and hostile beliefs, and suggests that anger is associated with depression due to the unpleasantness of the mood. Likewise, failures to achieve expected goals, or opposition from other people, also

arouse anger in relation to their affective discomfort. Affective discomfort may effect other aspects of self-control and, for example, exposure to unpredictable noise reduces subsequent ability to tolerate the frustration of persisting with insoluble puzzles (Glass, Singer, & Friedman, 1969). Studies also indicate that various areas of self-control, such as smoking cessation, dieting and gambling are more likely to fail under emotional distress. Furthermore, emotional distress increases the likelihood of choosing small immediate rewards over larger delayed rewards (Mishel, Ebbensen, & Zeiss, 1972).

Tice, Bratslavsky, and Baumeister (2001) in a series of experimental studies placed individuals in situations requiring self-control, however one group were informed that their mood was 'fixed' and unable to be changed. The results indicated that when people believed mood was unchangeable the tendency to engage in a snacking, immediate gratification or procrastination was not increased. Indeed, there was a trend for individuals in this condition to procrastinate less and spend more time on the boring task, compared to when mood was believed to be controllable. From this, they argue that self-regulation failure is not related to low self-efficacy, since confidence would be the same in both experimental conditions. Likewise, there was no evidence that being emotionally distressed reduced the desire of individuals to attain long-term rewards or reduced their confidence that they could attain these. Rather they argue that failures of self-control were due to a shift of priority from distant goals to immediate affect regulation. That is, emotionally distressed individuals make a strategic decision to reduce negative affect and this overrides impulse control. They also add that there was little evidence that the methods used to improve mood made any difference to this state, although they may have resulted in temporary pleasurable distraction.

Schwartz and Pollack (1977) have suggested that negative affect increases the value of immediate gratification by acting as a compensation to the discomfort, thus driving short-term goal orientation (Isen, 1984). There is also evidence that the *percieved* effectiveness of an activity to alleviate distress is more important than its actual effectiveness. For example, Bushman, Baumeister and Phillips, (2001) found that if an

individual believed that expressing anger reduced negative affect they increased this behaviour. Similarly, in the addictive behaviours, the belief that substance use is helpful in reducing stress and increasing relaxation is frequently cited as a reason for continued use. Whilst evidence regarding tension reduction as an explanation of general alcohol abuse (Conger, 1956) has been contradictory (Sayette, 1999) drinking to alleviate negative affect may apply to a sub-set of individuals (Cooper et al., 1995). For instance, although positive affect does not predict adult drinking, anxiety sensitivity scores are related to alcohol dependency and to increased drinking with negative emotion (Cooper et al., 1995; Stewart & Phil, 1994).

The generation of negative affect has been linked to goal frustration and positive affect to goal fulfilment (Scrull & Wyer, 1986; Frijda, 1987). From the prospective of goal formation it has been suggested that negative affect is the most powerful determinant of self-control. For instance, Carver and Scheier (2000) propose a feedback model of goal process with negative affect signalling negative discrepancies in goal attainment. They point out that this implies this system would aim to minimise pain and discomfort, not maximise pleasure. This is because pleasure would indicate a positive discrepancy and lead the system to ease off or move onto another goal. It also suggest that the pleasure resulting from single goals is likely to be fleeting, consistent with the REBT position that 'happiness' comes from involvement with long term meaningful goals (DiGiuseppe, 1991a; Emmons, 1996).

### 1.5.3 SELF-WORTH

Several theories have focused on the relationship between self-worth and self-regulation (see Crocker & Wolfe, 2001). Clearly some failures of self-regulation are associated with problems of self-worth, and individuals may fail to exercise self-control such as giving up smoking because of fears regarding appearance and self-esteem. Baumeister (1996) describes a number of 'avoidant defences' that maintain self-esteem, for instance ignoring the threat by shifting attention or changing the threat by reinterpretation. This

latter strategy of 'rationalisation' is particularly characteristic of those classed as 'repressors' (Baumeister & Cairns, 1992). Interestingly, other studies have indicated that repressors do not avoid aversive stimuli because of low tolerance of negative arousal, indeed their pain threshold have been found to be high (Jamner & Schwartz, 1986), suggesting they are more concerned with protection of self-esteem.

Heatherton and Baumeister (1991) propose that binge eating is motivated by the need to escape from aversive self-awareness. Thus, the failure to attain goals leads to lower self-worth and emotional distress and focusing on eating enables attention to be narrowed and distressing thoughts avoided. They argue this is consistent with evidence that, for instance, dieters with low self-esteem eat more after breaking a diet than those with high self-esteem (Polivy, Heatherton, & Herman, 1988). They also suggest that a similar process underlies other types of impulsive behaviour, such as self-harm (Baumeister, 1990), and substance abuse. However, evidence indicates these behaviours can also serve to regulate mood and discomfort separately from problems with self-esteem (e.g. Fairburn & Cooper, 1987). This is also consistent with research showing that individuals high in rejection sensitivity also have low pre-school levels of gratification delay (Ayduket al. 2000). However, the association between self-esteem and other aspects of self-control is complex and likely to be interactive (Baumeister, Heatherton, & Tice, 1994).

### 1.5.4 WILLPOWER AND EGO-DEPLETION

Baumeister and his colleagues, as well as Mischel (1996), have suggested that the concept of 'willpower' or ego-strength is required in any model of self-control (Muraven, Baumeister, & Tice, 1999). In a series of studies, individuals undertook a number of consecutive self-control tasks. They found that using self-control on subsequent tasks was consistently impaired by previous acts of self-regulation. Thus, trying not to think about a white bear reduces persistence on anagram problems (Muraven, Tice, & Baumeister, 1998). This impairment was also found to transfer across

different types of self-control, for instance trying to control emotion reduced anagram performance, and resisting temptation to chocolates reduced persistence on frustrating puzzles (Baumeister, Bratslavsky, Muraven, & Tice, 1998). Greater awareness of fatigue was also associated with lower self-control, suggesting that tiredness effects self-control by depleting the capacity for self-exertion (Muraven et al., 1998). Therefore, they propose that active self-control uses up a limited ego-resource analogous to willpower and similar to Funder and Block's (1989) trait of ego-control. They draw the parallel with a muscle in that, after recovery from bouts of self-control, exercise of self-control should improve further capacity. In comparison to a no-exercise group, a group of students who had performed self-control tasks showed significant improvement on tasks that were unrelated to the original task (Muraven et al., 1999).

Muraven et al., (1999) argue that these studies support an energy depletion model, rather than a schema or skills based model This is because if self-control were a skill no depletion would be seen on repeated use. Similarly, if it was based on a cognitive or knowledge schema repeated use would increase self-control since the schema had been already primed. However, alternative explanations are certainly possible. Thus, REBT would argue that both helpful and unhelpful schema related to frustration tolerance are activated by such situations. An aspect of these cognitions may involve beliefs regarding degrees of frustration. That is, that so much discomfort is acceptable but more than this is 'too much', and a rest is deserved. Another criticism is, whether the term employed is ego-strength or willpower, it remains unclear exactly what is being depleted. REBT also employs a strength concept, but in terms of the comparative strength of irrational and rational beliefs. Thus, the strengthening of these rational beliefs could also explain the improvement following longer-term self-control practice, and indeed a therapeutic method for improving frustration intolerance is that of purposely coping with frustrating situations, such waiting in long supermarket queues (Walen et al., 1992). It would also explain why in the short term repeated frustration would be likely, by activating low frustration tolerance beliefs, to increase resistance to further self-control.

### 1.5.5 PERSONALITY TRAITS

Drawing on rational choice theory, as well as behavioural theory, Gottfredson and Hirschi (1990) have proposed that individual differences in criminality reflect a broad disposition to self-control. They describe this as the absence of characteristics that enable a person to take a long-range view, a disposition that is shaped by childhood experiences. However, they emphasise that this should not be considered an enduring trait that compels criminal acts (Hirschi & Gottfredson, 1993). However, they do suggest this entails stable characteristics including an orientation to immediate gratification, lack of persistence, and being self-centered. They point to the evidence that offenders often commit a wide range of different types of criminal acts, and that this is often associated with other non-criminal activities such as drug taking, gambling, drinking, having in common a short-term orientation. They also note that a characteristic of many criminal acts is that they are opportunistic, immediately gratifying, represent the easiest option, and require little effort or planning. However, as to what lack of self-control consists of is not clarified. Measures of self-control have also been circular (e.g. Gibbs, Giever, & Martin, 1998) in that they have comprised items which describe the very behaviours used to define the concept.

One such broad disposition is the concept of impulsiveness, however definition of this concept varies considerably. Impulsiveness measures contain widely differing content and lack a consistent theoretical framework, including for example, adventure seeking and boredom susceptibility. The core features have been summarised as a reduced ability to delay immediate gratification and the tendency to respond without reflection (Lorr & Wunderlich, 1985). However, research suggests many individuals with self-control problems are aware of the long-term risks, desire to stop, but do not act on this. 'Impulsiveness' also implies that such problems are due to overwhelming impulse and the desire for immediate gratification. Nevertheless, it is debatable how far 'impulsive' acts can be ascribed to overwhelming desires. Indeed, analysis of the behaviour of shoplifters or self-harmers often reveals considerable planning (Baumeister &

Heatherton, 1994). Furthermore, thinking without reflection can be functional in some situations (Dickman, 1990). The concept has also been stretched to include a wide range of behaviours and traits. It has been argued that being so all encompassing it lacks explanatory meaning and is difficult to distinguish from a range of other personality traits (Blackburn, 1993). This is perhaps reflected in the wide range of existing impulsiveness measures, and evidence of poor intercorrelations between these measures (Parker & Badby, 1997).

A number of personality classification systems include an impulsiveness dimension but what this constitutes also varies considerably. For instance, in Eysenck's personality system, it is weakly related to both Extroversion and Psychoticism, although the meaning of Psychoticism is itself unclear (Eysenck & Eysenck, 1991). Zuckerman (1991) arguing that this is a mixture of impulsive-sensation seeking and hostility. For Zuckerman's own 'alternative five' model, the impulsive sensation-seeking dimension is a central component characterised by a lack of behavioural restraint. Gray (1987) suggests that introverts are more sensitive to punishment and frustrative non-reward, and extroverts to reward and non-punishment. Thus, Eysenck's personality dimensions are said to reflect an interaction between impulsivity and anxiety. The dimensions of Costa and McCrae's (1990) 'Big Five' model of personality have also been linked to a variety of beliefs. Aspects of low self-control, such as procrastination and illegal behaviours, are related to low Conscientiousness (Schouwenburg & Lay, 1995). Likewise, Agreeableness has been associated with revenge, interpersonal hostility, and the ability to control affect in frustrating situations (Graziano et al., 1996). However, doubts have been raised as to the interpretation and meaningfulness of these factors, with Eysenck (1992) suggesting that Conscientiousness and Agreeableness are facets of Psychoticism, and Block (1995) arguing the factors may merely reflect clusters of prestructured items.

### 1.5.6 SUMMARY

Consistent with behavioral studies, the social cognition literature suggests there are enduring individual differences in self-control. However, the research also suggests this

process is mediated by cognitive variables. The regulation of affect, possibly resulting from issues of self-worth, has been proposed as central in this process. Negative affect has been particularly highlighted as important and, as Teasdale (1991) notes, for humans aversive events usually consist of frustrated goals rather than physical pain. It may also be added that some behaviour may mislead in appearing to pursue pleasure, whereas the prime motivation is relief from emotional discomfort (Thayer, Newman, & McClain, 1994). For example, many superficially enjoyable activities, such as shopping, eating binges and exercise may serve as distraction from distress (Tice, Muraven, & Baumeister, 1993: Heatherton & Baumeister, 1991).

However, the mechanism whereby negative affect is tolerated remains unclear. Attentional strategies and self-efficacy have been suggested but are unlikely to fully explain resistance to gratification. For example, self-control often is required over lengthy periods of uncertainty where exposure to temptation is likely and distraction difficult to sustain. Personality traits such as impulsiveness have also been associated with self-control, as have concepts such as ego-depletion, however the meaning and nature of these traits is unclear. In the last part of this chapter, models that propose that specific types of cognition mediate self-regulation will be considered.

## 1.6 COGNITIVE-BEHAVIORAL MODELS

Seligman's learnt helplessness theory of depression was reformulated, or replaced, by a cognitive model (Abramson, Seligman, & Teasdale, 1978). This proposed that stable, internal, and global causal attributions for bad events were more likely to be made by depressives. This suggests that different sub-types of depression exist depending on the pattern of attributions. Thus, internal attributions leads to low self-esteem, and global and stable attributions to more chronic motivational deficits without lowered self-esteem. A later revision moved away from attributions regarding lack of control and 'helplessness' to those of 'hopelessness' and negativity, with low self-esteem deriving from a general negative style and stability and globality adding chronicity (Abramson,

Metalsky, & Alloy, 1988). This model is closely associated with Beck's Cognitive Therapy approach.

Ellis (1979a) originally drew a parallel between his concept of discomfort anxiety (or frustration intolerance) and that of learned helplessness and experimental neurosis. That is, individuals when faced by unpredictable or uncontrollable situations are led to conclude they are '*too* uncomfortable'. However, he points out (Ellis, 1987b) that REBT differs very importantly from behavioural models in that it proposes that frustrating or negative events alone will not necessarily lead to depression, but are mediated by beliefs regarding these events. Ellis also argues that REBT differs from Beck's (1967) Cognitive Therapy Model as regards the type of cognition that are considered central to emotional disturbance. REBT proposes that, on their own, negative attributions regarding frustration or loss will lead to 'healthy negative emotions', such as sadness. The additional dysfunctional belief that needs to be associated with these attributions to produce 'unhealthy negative emotion', such as depression, is the absolute demand that the frustration or loss 'must not exist'. However, evolving changes in both Cognitive Therapy and REBT theory have made this distinction less pronounced. Thus, Cognitive Therapy has emphasised underlying dysfunctional cognitive schema described, as are irrational beliefs, as rigid, absolutistic, and global (Beck, A. T., Freeman, & Associates, 1990). Likewise, recent REBT theoretical debate has suggested that global negative self-worth beliefs may operate separately from those of demands (DiGuiseppe, 1996).

Nevertheless, differences remain both in emphasis and formulation between these two cognitive-behavioural approaches. Regarding Cognitive Therapy, Safran et al. (1986) have suggested that meaningful therapeutic change is more likely to involve higher level cognitions. Similar to other theorists (Guidano and Liotti, 1983) they propose that these higher level belief are fundamentally related to the self-concept, and that therapeutic improvement depends on changes in the rules on which self-worth is based. Beliefs unconnected to the self are assign to a peripheral role, and they suggest that these should 'ultimately be evaluated in terms of their impact upon self-perception'. However, they

note that it can be argued that irrational beliefs represent just such higher level beliefs, and that REBT is primarily focused on changing these beliefs in preference to more peripheral distorted thinking. They qualify this by adding that irrational beliefs are not explored in terms of their idiosyncratic meaning for each patient, and indeed REBT does avoid undue examination of personal meaning, emphasising instead the belief processes involved in disturbance (Yankura & Dryden, 1994). Safran et al. (1986) also point to the importance of common themes related to the self, such as sociotropy and autonomy (Beck, 1983). In contrast, REBT theory has proposed the existence of two broad categories of higher level belief: those involving the intolerance of life conditions as well as those pertaining to the self.

## 1.7 THE REBT CONCEPT OF LOW FRUSTRATION TOLERANCE

### 1.7.1 STRUCTURE OF IRRATIONAL BELIEFS

The general concept of low frustration tolerance is found in rudimentary form in the original list of irrational beliefs (Ellis, 1962). Indeed, the belief that unfair or frustrating events are awful, and that difficulties are easier avoided, are discussed at length in the early self-help books (Ellis & Harper, 1975). However, there is no specific definition of low frustration tolerance and examples of low frustration tolerance vary considerably in their content. Furthermore, the terms low frustration tolerance and discomfort disturbance are sometimes used interchangeably (Neenan & Dryden, 1999). Ellis (1979a, 1980b) initially used the term 'discomfort anxiety' and distinguished this from 'ego-anxiety'. He defined discomfort anxiety as the emotional tension resulting from irrational beliefs regarding a threat to personal comfort and the belief that one must get what they want (or must not get what they don't want). In comparison, ego-discomfort is the emotional tension resulting from irrational beliefs associated with a threat to self-worth and the belief that one must perform well and be approved of by others. However, it became apparent that a range of other emotions could be similarly classified, including discomfort depression and discomfort anger. Furthermore, these types of belief were

also involved a range of dysfunctional behaviours, such as therapeutic resistance (Ellis, 1985a), procrastination (Ellis & Knaus, 1977), and addiction (Ellis, McInerney, DiGiuseppe, & Yeager, 1988). Thus, the general term discomfort disturbance was eventually used to describe the range of emotions and behaviours resulting from these irrational beliefs.

In summary, REBT classifies human disturbance into two categories, ego disturbance and discomfort disturbance. Broadly speaking, the irrational beliefs in ego-disturbance refer to self-worth, whereas in discomfort disturbance they refer to the intolerance of discomfort (Ellis, 1979a). Low frustration tolerance has been most commonly used to refer to the beliefs or philosophy that underlies the area of discomfort disturbance. That is, the belief that it is absolutely impossible to tolerate a discomfort or frustration. In contrast, ego disturbance involves beliefs regarding the self, specifically that the self is only acceptable if certain standards are met (Ellis & Dryden, 1987). Apart from being the defining belief within the discomfort disturbance category of disturbance, low frustration tolerance also one of the four types of irrational belief. Ellis has argued that demandingness is the central belief and the other three belief processes, self-worth, awfulising, and low frustration tolerance, derive from demand beliefs like spokes emerging from the hub of a wheel (Ellis, 1989). These can be summarised as follows:

1 Demandingness

Demandingness involves an absolute imperative that oneself, other people, or the world 'must' be a certain way. The corresponding rational belief is a preference or desire that things are a certain way, but an acceptance that they may not be.

2 Self-Downing

Self-downing involves global negative evaluations of the self. The corresponding rational belief is based on acceptance of the self and human fallibility.

### 3 Awfulising

Awfulising refers to the belief that something is absolutely bad rather than just unfortunate. The corresponding rational belief is the evaluation of events on a continuum of badness rather than as an absolute.

### 4 Low frustration tolerance

Low frustration tolerance is usually expressed in terms such as "It's too much, I can't bear it, I can't stand it, I can't tolerate it." Such beliefs imply that a person would believe the situation impossible to cope with: It would be too overwhelming, too hard, or too uncomfortable. The corresponding rational belief is acceptance that frustrations and discomforts exist but they can be tolerated and it is constructive to do so in order to reach one's goals. In REBT the term frustration is used to describe the failure to achieve a goal not the associated emotional reaction (Trexler, 1976).

Frustration intolerance is sometimes discussed in terms of an additional underlying meaning. That is, the person will disintegrate, or will never experience any happiness again. However, it is arguable whether these additional meanings are required or are definitive of this belief. Several theorists suggest that the essential irrationality involved in both demands and frustration intolerance is the refusal to accept the distinction between the ideal and the reality (DiGiuseppe, 1996). In which case, intolerance of something that can be tolerated is sufficient definition of 'irrationality' in itself. It is also unlikely that an individual refusing to tolerate an uncomfortable task or frustration believes they will disintegrate or be continually miserable. It may be true in some problems such as panic disorder that catastrophic beliefs may occur regarding death, and in depression that the future is hopeless. However, it is debatable that these beliefs are more descriptive of awfulising rather than frustration intolerance. Indeed, hopelessness

may be said to represent a generalised negative inference regarding the future, rather than being a true irrational belief.

### 1.7.2 SELF-WORTH AND FRUSTRATION INTOLERANCE BELIEFS

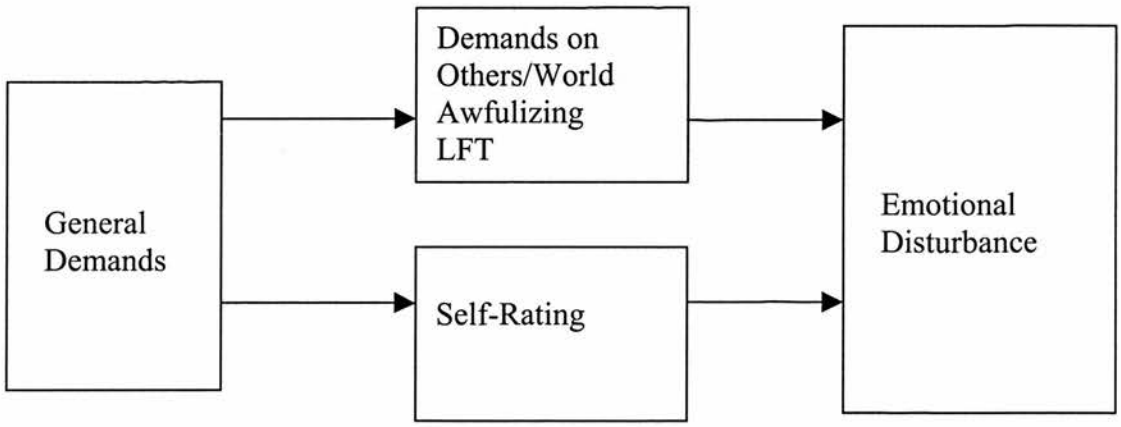
The interrelation of the four types of irrational belief has been the focus of considerable debate. Ellis (1994a) has argued that demandingness beliefs are central and from these beliefs radiate the other three derivative beliefs. However, other researchers have placed the derivative beliefs, particularly those of self-worth and frustration intolerance, in a more central position. Wessler and Wessler (1980) suggest the essence of irrational thinking is that it 'ignores reality in favor of what the individual says should exist'. Rorer (1989) proposed a similar definition of irrationality and sub-divide irrational beliefs into two further groups. Firstly, that of grandiose beliefs, for example, 'the world should treat me fairly.' These beliefs represent demands that one self, other people, or the world must be different from the way it actually is, simply because the person wants it that way. Secondly, beliefs that confuse evaluations with objective evaluation, for example definitions of self-worth based on arbitrary standards.

Indeed, clinical experience suggests that people distinguish between schema regarding the self and those referring to the world and other people (DiGiuseppe, 1996). Furthermore, DiGiuseppe, Leaf, Exner, and Robin (1988) found that demandingness, frustration intolerance, and awfulizing, all loaded on one factor whilst self-rating loaded on a separate factor. A confirmatory factor analysis also supported a two factors (DiGiuseppe, 1998), as did Bernard's (1998) study in which self-rating emerged as being separate from 'absolutistic thinking'. Therefore, DiGiuseppe's (1996) argues that the distinction is not simply related to the content of the beliefs. More importantly, he proposes that these two categories involve different underlying cognitive processes: 'both involve musts but are different types of thought'. That is irrational beliefs referring to the outside world and beliefs involving self-worth are different types of belief. Frustration intolerance reflects a demand that reality be different. It is a failure to

distinguish between a preference and empirical reality, and this mismatch between desire and reality attempts to shoehorn one into the other. In comparison, ego-disturbance is based on conditional statements of self-worth based on arbitrary self-definition.

DiGiuseppe (1996) discusses three models that could represent the interconnection of irrational belief processes with emotional disturbance. In the first model, demandingness creates the other three irrational beliefs, including self-worth, which then lead on to emotional disturbance. The second model has demandingness directly related to emotional disturbance as well as via the derivative beliefs. In the third model, self-rating leads to emotional disturbance independently from demandingness, with demandingness leading directly to emotional disturbance as well as through awfulising and frustration intolerance. In reply, Ellis (1996b) has agreed that demandingness, awfulising, and frustration intolerance can be separate from self-rating. However, he emphases that both sets of beliefs are created by demandingness, suggesting the term 'general demandingness' to refer to absolute demands regarding the self and the term 'specific demandingness' to refer to demands on others and the world but excluding the self. This model suggested by Ellis is shown in figure 1.

Figure 1 Model of the interaction between irrational belief (Ellis, 1996b)



Following Wessler and Wessler (1980) and Muran (1991), DiGiuseppe (1996) suggests that beliefs are expressed as compound sentences. Thus, a frustration intolerance belief involves a 'must' combined with awfulising or frustration intolerance statements, "I must not be criticised and if I am, I can't stand it." Whereas, a self-worth belief would involve a demand regarding arbitrary definitions of self-worth, "I must not be criticised and if I am that would make me a worthless person." If this model is correct then demandingness beliefs on their own are insufficient to determine whether a person is experiencing ego or discomfort disturbance (Dryden, 1996). For instance, "I must not feel anxious" could refer to intolerance of emotional discomfort, or to a fear of appearing inadequate, or both. Likewise, Dryden also argues that awfulizing beliefs do not define whether the disturbance primarily involves ego and frustration intolerance beliefs, since both types of problem could be 'awful'. The assessment of these two categories of belief is further complicated in that each type of belief can be operational in the other domain (Neenan & Dryden, 1999). For example, an individual might perceive emotional discomfort as evidence of personal weakness (ego disturbance).

### 1.7.3 CONTENT OF FRUSTRATION INTOLERANCE BELIEFS

Opinions have been divided as to whether irrational beliefs were best conceptualised in terms of processes or content and how belief process and content might interact (Sutton-Simon, 1981). Campbell (1985, 1988) suggested that the four belief processes might be most usefully viewed as interacting with a specific set of content themes, that is approval, achievement, and comfort. This was supported by Davidson's (1985) research that indicated that irrational beliefs could be described both in terms of the belief process and content. Ellis and Dryden (1987) proposed a matrix incorporating four belief content themes, approval, achievement, comfort, and fairness, with the four irrational belief processes (figure 2). It has been further suggested that the content categories could include that of 'control' (Walen, DiGiuseppe, & Dryden, 1992), and positive gratification (Dryden & Yankura, 1993).

Many of the examples of frustration intolerance beliefs in the literature (e. g. Dryden & Gordon, 1993) fit into the categories described in this matrix Thus, a central group of beliefs is the intolerance of hard work and demands for ease and comfort. This belief implies that a situation is too overwhelming, hard, uncomfortable, and unbearable. Intolerance of negative feelings concerns problems such as anxiety about anxiety, characteristic of discomfort anxiety. In addition to discomfort intolerance, there is also frustration intolerance regarding being blocked in ones goals. Thus, Ellis (1994a) describes the essence of low frustration tolerance as 'other people must give me exactly what I desire and conditions must be nicely arranged to cater to my wishes'. These beliefs, reflecting Horney's work, often refer to unfairness both in relation to treatment from other people and from life in general. Associated with this theme is the demand for immediate gratification and the intolerance of delay or deprivation of pleasure. Frustration intolerance in the area of achievement is also of particular interest. Research on the Type-A behaviour pattern indicates a strong relationship between excessive achievement striving and a 'relative stable tendency to react to a broad range of frustration-inducing events' with anger and resentment (Dembrowski & Czajkowski, 1989). However, these beliefs would seem to contrast with other forms of discomfort intolerance such as for ease and gratification. Often associated with perfectionism are demands for certainty and control, and Dryden and Gordon (1993) have described the need for control as the 'mainspring' of discomfort anxiety.

Table 1 Model of the interaction between irrational belief processes and content (Walen, DiGiuseppe, & Dryden, 1992).

| | | IRRATIONAL PROCESSES | | |
|---|---|---|---|---|
| | | Demands | LFT | Self-rating |
| B E L I E F | Awfulizing | | | |
| | Affiliation | | | |
| | Achievement | | | |
| C O N T E N T | Comfort | | | |
| | Fairness | | | |

However, Neenan and Dryden (1999) have argued that low frustration tolerance involves a wider range of difficulties than just tolerance of frustration or discomfort and therefore should be replaced by reference to a wider category of 'non-ego disturbance'. They outline a 'preliminary taxonomy' listing the forty-two sub-categories of belief that non ego-disturbance may take. However, the definition of frustration in REBT is broad and refers to all situations in which a person's goals are blocked. Taking this broader perspective, frustration intolerance may be defined as not getting what you want, as soon as you want it, or getting what you don't want, and being unable to be free of it as quickly one would like (Ellis, 1979a). From this, it is arguable that many of the situations described within non-ego disturbance could also be covered by the term frustration-discomfort disturbance. To avoid the ambiguity of the terms low frustration

tolerance and discomfort it was decided in this study to use the term frustration intolerance to refer to this category of irrational beliefs.

### 1.7.4 THE DEFINITION OF IRRATIONALITY

The term 'irrational' has also been the cause of confusion regarding its meaning and criticised for lacking theoretical precision. For example, REBT has been wrongly associated with rationalism, the philosophical theory that places reason above emotion and as the arbiter of knowledge (Mahoney, Lyddon, & Alford, 1989). However, Ellis changed the name to Rational Emotive Therapy in 1962 to underline the interconnection of emotion and cognition. Recent philosophical critiques of rationality in REBT have also focused on its failure as a logical concept (Erwin, 1997; O'Donohue & Vass, 1996). However, Dryden and Still (1998) in reply, argue that 'rationality' should be placed in context with the philosophical, and specifically Stoic, framework from which it derives. They, like Haaga and Davidson (1993), conclude that there is 'no essential and eternal entity to which the word "rationality" applies'.

However, some descriptions of irrational beliefs have remained central and Maultsby (1984) defined irrational beliefs as being illogical, at odds with empirical reality, and interfering with achievement of personal goals. Additionally, the rigidity and dogmatism of irrational beliefs has also been emphasised. DiGiuseppe (1996) notes that Maultsby did not clarify whether irrational beliefs needed to meet all or just one of these criteria, although REBT texts have usually assumed that all three are required (Ellis & Dryden, 1987). Indeed, the separate use of these criteria may result in beliefs being wrongly classified as 'irrational'.

That illogical inferences are not by themselves irrational can be understood by reference to the cornerstone of REBT theory, the A-B-C model of emotional disturbance. As originally proposed, the A stood for an activating event and the B for the beliefs about this event leading at C to emotional and behavioural consequences. Included as beliefs

within B were both 'inferences' and 'evaluations' about the event (Ellis, 1984). However, Wessler and Wessler (1980) expanded this relatively simple model splitting the two types of belief and placing inferences in A, with B reserved for evaluative beliefs, which were defined as the meaning attached to events. They proposed that it was these exaggerated and rigidly held negative *evaluations* that were definitive of irrational beliefs, not distorted *inferences* regarding the event. Thus, REBT argues that whilst illogical or unrealistic inferences may contribute to psychological disturbance they are not definitive of irrational beliefs.

Nevertheless, that irrational beliefs are partly defined by being illogical is problematic. It implies that thinking in non-disturbed individuals is logical and realistic, although evidence indicates that this is not the case (Power & Dalgleish, 1997 for review). For example, there appears to be no consistent association between empirically unfounded religious beliefs and emotional dysfunction (Gartner, Larson, & Allen, 1991). On the contrary, some studies have found significant correlations between measures of religiosity, such as personal prayer, and psychological well being (Maltby, Lewis, & Day, 1999). In respect to frustration tolerance, Dudley (1999) found that subjects holding superstitious beliefs showed greater persistence with solving anagrams following unsolvable puzzles. This is of particular interest to REBT given that Ellis (1971) originally suggested that religiosity actually created emotional disturbance. In response, Ellis argues for a distinction between absolute dogmatism and religious affiliation itself. He also has made it clear that, although self-defeating actions are highly correlated with irrational beliefs, people are sometimes productive in spite of such beliefs (Ellis, 1989).

REBT has also defined rational beliefs as enabling people to live longer, happier, and more fulfilling lives (Ellis & Bernard, 1985). Rational in REBT therefore means "that which helps people to achieve their basic goals and purposes, whereas irrational means that which prevents them from achieving these goals and purposes" (Dryden, 1994a). However, the evidence above suggests that some beliefs considered inflexible and

dogmatic may sometimes promote happiness. In addition, the circularity of the definition in terms of undesired outcomes or goals has caused concern (Haaga & Davidson, 1993; Rorer, 1989). Wessler (1996) has also pointed out that beliefs could only be defined as irrational when the outcome of goals has become known, in which case can beliefs be classified *a priori* without reference to goals or outcomes.

DiGiuseppe (1996) suggests the cognitions defined as irrational beliefs are a 'type of schema that merges what is with what is desirable, moral or correct.' He accepts the term 'irrational' can be misleading and he suggests the use of alternatives such as dysfunctional belief. Ellis (1996b) agrees that the implication that irrational beliefs are only unrealistic and/or illogical rather than also being self-defeating is also mistaken. Irrational beliefs could be seen as an aspect of a 'quick and dirty' system that enables rapid but less flexible decisions to be made (Epstein, 1990). It may therefore be more constructive to consider beliefs in regard to their functions, rather than in terms of logic or realism. Mischel's model of self-regulatory failure incorporates such ideas and is based on two cognitive systems (Metcalf & Mischel, 1999): a 'cool' system that is flexible and concerned with complex reflection but slow, and a 'hot' system that is emotional, impulsive, and simple but fast. However, the REBT model, whilst also proposing flexible and inflexible processing systems, is significantly different in that it does not assume that negative emotions are only associated with inflexibility and impulsivity. Rather, REBT suggests that 'healthy' negative emotions are generated by the 'rational' system and that these motivate and direct goals. This is consistent with cognitive models that suggest a function of emotions may be to prioritise goals and to move out of unproductive patterns (Oatley & Johnson-Laird, 1987).

In this regard, it may also be noted that Ellis (1979a) initially suggested that discomfort anxiety was particularly associated with phobias. However, it can be argued that many phobias and other emotions such as anger may well be triggered by automatic, conditioned associations (Salzinger, 1995). This highlights the danger, noted in regard to many cognitive models, of ignoring automatic processes in preference to higher level

cognition (Power & Dalgleish, 1997). Nevertheless, it is true that even if problems involve automatic processes the patients has to decide to work at problems in spite of emotional distress and discomfort (Power, 1991). Although Power (1991) relates this to strengthening the self-concept, REBT would argue that it applies equally to the concept of frustration intolerance. Indeed, O'Gorman and Baxter's (2002) research, using the Gibbs et al. (1998) self-control measure, supported a model incorporating two self-control processes: A conditioned inhibitory process involving associative learning, and a cognitive control process.

### 1.7.5 LEVELS OF FRUSTRATION TOLERANCE

The use of the term 'low' frustration tolerance to refer to both minor and major frustrations is problematic. Several theorists have suggested alternatives, for instance Neenan and Dryden (1999) suggest the use of different terms depending on the degree and type of frustration, and Joyce (2001)[18] proposes using the term 'inadequate frustration tolerance'. By referring to frustration intolerance preventing goal achievement this avoids comparisons between levels of frustration and is consistent with recent definitions of irrationality. There are also other problems with the term 'low' and 'high' since this may, for example, imply that toleration of high levels of frustration is necessarily good. However, too 'high frustration tolerance' such as in persisting with hopeless goals, is often as unadaptive as easily giving up (Ellis, 1976a). Certainly, the passive acceptance of frustration is not recommended by REBT but rather flexible attempts to overcome frustrations (Ellis, 2000). Indeed, REBT considers frustration as a motivator, which is consistent with the finding that successful life changes were more likely to follow an accumulation of discontent and emotional distress (Heatherton & Nichols, 1994).

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[18] Personal communication

Both engaging and disengaging from tasks is clearly important, and the ability to disengage from failing goals has been theorised as important in depression (Nesse, 1998, Klinger, 1975). Whether or not persistence was dysfunctional would depend on the beliefs involved, with different types of frustration intolerance beliefs leading to quite opposite behaviours. Thus, counterproductive persistence may reflect other forms of intolerance of change. Brockner, Shaw and Rubin (1979) found that counterproductive persistence was more likely when active effort was required, suggesting that people continued because it was too much hassle to change. On the other hand, persistence may derive from inflexible achievement demands, and the inability to tolerate less than perfect performance.

### 1.7.6 PLEASURE VERSUS PAIN: APPROACH AND AVOIDANCE

Clearly, situations involving self-control can be described both in terms of negative consequences and positive gratification. However, the question of valence, the relative importance of pleasure versus pain, has not received much attention in REBT. Thus, it is unclear to what extent low frustration tolerance refers to the reduction of discomfort or the pursuit of pleasure. Dryden and Yankura (1993) have suggested a further aspect of frustration intolerance is that of attaining positive gratification. Certainly, short-term hedonism and immediate gratification are considered central to frustration intolerance but often refer to reductions in discomfort as well as the pursuit of pleasure. Thus, long-range hedonism has been defined as pursuing long-term goals whilst tolerating the discomfort of short-term deprivations (Dryden, 1994a). Still and Dryden (1999) suggest that Ellis is unconcerned with the distinction between positive and negative states considering them endpoints of a utilitarian dimension. Nevertheless, evidence suggests that positive and negative affect are not on a continuum but distinct states (Frijda, 1986). Reflecting this, Neenan and Dryden (1999) suggest that non-ego disturbance involves maintaining, reducing or increasing both positive and negative states and events.

As noted above, a number of theoretical models are linked to the concept of approach/avoidance behaviour (Carver & Scheier, 1996; Higgins, 1996; Grey, 1987). Ryan and Deci (1999) argue that self-regulation cannot be reduced to a simple approach /avoidance equation, and is likely to involve a mixture of both systems. However, the definition of avoidance behaviour is important, and is best understood in terms of the goals. Avoidance/approach refers to stimulus reduction/enhancement, not simply going away/ towards a situation (McClelland et al., 1953). Thus, responses such as aggression or the use of alcohol, whilst involving 'approach' behaviour, may functionally be aimed at avoidance in terms of removing an unwanted situation or emotion. Thus, individuals may seek 'positive gratification', not for its own sake, but believing this will help reduce negative affect often created by the behaviour itself (Clark & Isen, 1982). As noted above, the importance of tolerating negative states is a central feature of several different theoretical approaches to self-control (Baumeister et al., 1994; Eisenberger, 1992; Amsel, 1962; Mischel, 1996).

There is evidence that avoidance behaviour resulting from aversiveness is more rigid, in contrast with the more flexible responses based on positive reward (Gray, 1987). Similarly, evidence suggests that aversive events provoke more intense responses, leading to narrowing of attention and more extreme attributions. On the other hand, positive affect is associated with greater flexibility of thought and creativity (Isen, 1984), attributes assumed characteristic of rational beliefs. Although positive affect leads to a desire to maintain this state (Isen, 1984), the evidence does not suggest that it reduces the ability to resist temptation (Frey, 1975) or delay gratification (Schwartz & Pollack, 1977). Whilst there is considerable evidence that positive states do lead to the choice of pleasant activities over unpleasant activity, this appears to be a strategic decision based on the desire to maintain a positive state (Wegener & Petty, 1994). Research also suggest that positive affect increases heuristic problem solving (Isen, 1993), although when necessary individuals can choose a more elaborate cognitive approach (Bodenhausen, Sheppard, & Kramer, 1994). Similarly, in positive states the avoidance of discomfort appears to be a choice that can be reversed when required

(Power & Dalgleish, 1997). This is also consistent with Gottfredson and Hirschi's (1990) view that criminals have no particular gratification needs. From this, it could be argued that positive states are more likely to involve preferential 'rational' beliefs and negative states irrational beliefs.

Nevertheless, immediate gratification has been considered, both in REBT and more widely, an important feature low self-control (Gottfredson & Hirschi, 1990; Dryden & Neenan, 1995). Certainly, immediate gratification is likely to be a prominent feature of frustration intolerance if for no other reason than it takes less effort to indulge immediate self-interest and desires. However, some qualification is still required. For instance, Logue (1996) notes that impulsiveness as a strategy is sometimes effective in maximising rewards, for example in conditions of uncertainty, and cautions against value judgements regarding immediate gratification. Similarly, the pursuit of risk, excitement, and gratification are insufficient by themselves to indicate frustration intolerance. Thus, a distinction needs to be made between immediate gratification that is a preferred choice, and therefore not irrational even if associated with future costs, and immediate gratification resulting from frustration or discomfort intolerance. In other words, frustration intolerance implies acting in spite of negative longer-term consequences that are best avoided. However, the pursuit of immediate gratification by itself does not necessarily imply frustration intolerance.

### 1.7.7 TRAIT OR STATE

Opinions are divided as to whether low frustration tolerance beliefs represent a trait or state, with irrational beliefs having been described in terms of both. Ellis suggests that frustration tolerance involves both learnt as well as a large innate component (Ellis & Knaus, 1977). However, Bond and Dryden (1996c) argue that 'demandingness' is best characterised as a state since within the ABC model specific beliefs are associated with specific 'activating events'. However, the simplified ABC framework does not adequately describe the complex interaction between emotions, behaviour and

cognitions (Ellis, 1991). ABC sequences very rarely exist by themselves and usually involve a network of irrational beliefs, behaviours, and affect. Thus, irrational beliefs are not simply isolated propositions but involve a more complex framework of meaning (Ellis, 1976b) compared to automatic thoughts or inferences, cognitions that have traditionally been described in terms of states (Beck, Epstein, & Harrison, 1983). Irrational beliefs have been likened to the concept to 'schema' in Cognitive Therapy, which have been described as ' inflexible, imperative, and resistant to change' (Beck, Freeman, & associates, 1990; Ellis, 1996b). Similarly, irrational beliefs are described as core philosophies involving 'rigidly held schema that are resistant to change' (DiGiuseppe (1996). Beck et al. (1990) suggests that personality 'traits', being more continually operative, less easy to modify, and triggered by wider situations, are an expression of dysfunctional schema. This suggests that for some individuals irrational beliefs operate like traits, with combinations of related beliefs associated with a wide range of potential activating situations. Such clusters of beliefs may also become chronically activated and constitute a form of enduring vulnerability and disturbance. It is likely that irrational beliefs will reflect both situations and traits, with most theorists accepting that an interaction between these influences is the best model (Matthews & Deary, 1998). Certainly, the evidence discussed above strongly suggests people differ in their industriousness and ability to delay gratification, and that these differences are stable over time and across situations.

## 1.8 SUMMARY AND CONCLUSIONS

This first chapter has attempted to place the concept of frustration intolerance into a broader context and to arrive at a definition of this concept. The idea that the tolerance of adversity is central to understanding psychological disturbance has strong philosophical and psychological roots. Stoic philosophy described the underlying cause of frustration and discomfort intolerance as essentially the attempt to shoehorn reality into our own demands. Likewise, the work of Karen Horney emphasised the relationship between 'claims' on the world with resentment and withdrawal. The REBT concept of

frustration intolerance has derived from these and other historical sources. This may be summarised as confusing wants/desires with demands/needs and believing that when these are not forthcoming it is intolerable. In other words, it is not frustrating events that cause emotional disturbance but the belief frustrations *should* not exist and *cannot* be tolerated.

Therefore, it is not the desire for positive gratification that leads to dysfunction, and indeed REBT has 'always encouraged people to strive for the pleasure of the moment... and of the future' (Ellis, 1996b). Indeed, this review has suggested that frustration intolerance may be best phrased largely in terms of negative consequences, that is not getting something one wants or getting something one doesn't want. As a working definition, frustration intolerance is the belief that frustration/discomfort is (absolutely) intolerable in spite of the awareness of significant negative consequences that the individual wishes to avoid. In other words, frustration intolerance involves being aware of longer-term goals and costs but lacking the tolerance to achieve these: It is the unwillingness to tolerate discomfort or frustration in spite of greater long-range negative consequences to personal goals.

As such, the pursuit of gratification is not synonymous with frustration intolerance, although this may be the case if gratification is indulged in spite of significant negative consequences. Indeed, animal behavioural research indicates that immediate rewards are more tempting than delayed rewards (Ainslie & Herrnstein, 1981). Similarly, humans have a marked preference for comfort across a number of areas, such as in avoiding change or making difficult decisions (Anderson, 2003). Thus, Gottfredson & Hirschi (1990) and others have argued that the pursuit of immediate gratification and self-interest requires no special theory since behaviour naturally follows the easiest and most tempting option unless restrained. An explanation of psychological disturbance therefore requires to answer why short-range rewards are not indulged more often and what is the nature of this restraint. The notion of individuals being overwhelmed by impulse is arguably mistaken, in that whilst individuals do not choose to have impulses they can

decide whether to act on these (Baumeister et al., 1994). As theories of rational choice have argued, actions appearing 'impulsive' often involve deliberate choices, although choices have costs regarding longer-range goals.

Cognitive-behavioural models propose that cognitions are central to the process of self-control. However, the types of beliefs involved have not been clearly identified. Many theorists propose self-worth as the most important aspect, either directly (Baumeister, Heatherton, & Tice 1993) or indirectly through other types of belief such as perfectionism (Hewitt & Flett, 1989; Frost et al., 1990). Uniquely, REBT has distinguished between two categories of belief involved in psychological disturbance. That is, frustration intolerance involving demands that reality be different and ego disturbance representing conditional definitions of self-worth (DiGiuseppe (1996). Many cognitive approaches, such as Schema Focused Therapy and Cognitive Therapy, have primarily focused on the relationship of the self to emotional disturbance. For example, it has been noted that Beck's cognitive triad, describing types of depressive belief, refers largely to the self rather than general world conditions (Haaga, Dyck, & Ernst, 1991). The next chapter will explore the literature regarding the assessment of irrational beliefs, and specifically those relating to frustration intolerance as opposed to self-worth.

# CHAPTER TWO

# THE ASSESSMENT OF IRRATIONAL BELIEFS

## 2.1 INTRODUCTION

The development of reliable and valid measures for the assessment of irrational beliefs is essential if the basic tenets of REBT are to be studied. Unfortunately, a number of difficulties have hindered this goal. Smith (1989), in reviewing the problems of obtaining empirical support for REBT, argued that 'issues of assessment lie at the heart of these limitations.' This he thought was related to the insufficient attention given to methodological issues. Ten years later Burgess (1990) complained that the inadequate validation of basic REBT assumptions was due to a lack of 'formal rigor and precise specification' in REBT theory. These issues, regarding methodology and theory, will be examined in this chapter and research aims outlined.

## 2.2 EARLY SCALES

### 2.2.1 METHODOLOGICAL ISSUES

Many early tests paid scant attention to the requirements of test construction or psychometric theory. For example, scales such as the Self-Rating Scale for Rationality (Bard, 1973) and the Common Belief Scale (Maultsby, 1974), displayed a range of inadequacies including lack of validity, reliability, and normative data (Sutton-Simon, 1981). The most commonly used early test was the Jones (1968) Irrational Beliefs Test (IBT). Whilst this had improved psychometric properties, there was considerable doubt as to the factor structure. This consisted of ten factors but many of the items had poor factor loadings. Forty-one items were not placed on the scale with which they loaded highest, and nine items were placed on scales on which they had one of their bottom five loadings (Lane, Bessai, & Bard, 1977). The sub-scales were:

1 Demand for approval
2 Personal perfection
3 Blame-proneness
4 Catastrophizing
5 Emotional irresponsibility
6 Anxious over concern
7 Problem avoidance
8 Dependency
9 Helplessness
10 Perfect solutions

Other questionnaires using the older irrational belief list were the Idea Inventory (Kassinove, Crisci & Tiegerman, 1977) and the Rational Behaviour Inventory (Shorkey & Whiteman, 1977). The Common Belief Survey III (CBS III), also used the early belief list but separated rational and irrational beliefs (Bessai, 1977).

Numerous studies using these early scales have showed significant correlations with a wide range of psychological difficulties including anxiety (Sutton-Simon & Goldfried, 1979), anger (Deffenbacher, Zwemer, Whisman, Hill, & Sloan, 1986), and depression (LaPoint & Crandell, 1980). However, Smith (1989) argued that positive correlations are invariably found between measures of dysfunctional beliefs and emotional problems due to a shared association with negative affect and problems regarding item wording. Thus, correlations with measures of the same construct need to be higher than cross-construct correlations or they may merely reflect similar wording across questionnaires. Such similar wordings will artificially increase the association between the separate measures. Whilst measures of irrational belief would be expected to strongly correlate with measures of distress, they should not correlate to the point they were indistinguishable. In fact, the convergent correlation between the RBI and the IBT was found to be very high, but these scales were equally highly correlated with measures of anger, depression, and anxiety (Smith & Zurawski, 1983).

Smith therefore argued that the evidence for discriminative validity was lacking, and the probable cause of this poor discrimination was the cross contamination of item content, a common problem throughout personality research (Costello, 1992). This is because in order to examine the relationship between cognitive and emotional variables it is necessary that the measure of each is independent from the other. Thus, many of the items on the IBT refer to dysfunctional emotions or behaviour as well as cognitions, for instance: 'When people don't do what I want I feel upset". This is compounded by the use of inadequate descriptive terms for emotions such as 'upset'. Therefore, the poor discrimination and high correlations with measures of distress may be a result of similar wording of questions on these separate measures. Smith points out that all of the twenty or more scales prior to 1982 contained items designed to assess emotions as well as beliefs. For example, 33% per cent of the IBT items involve wording related to affective states. A similar number of items refer to behaviour. Only 50% of the items on the RBI and the IBT where in the form of belief statements (Ramanaiah, Heerboth, & Schill, 1987). The questionnaires were therefore assessing the very emotions and behaviours that they were meant to predict, a criticism that had also been made by Lane et al. (1977) in their review of irrational belief assessment ten years earlier.

### 2.2.2 THEORETICAL ISSUES

Whilst Smith's review weakened the validity of these early scales there was nevertheless some evidence supporting the relationship between irrational beliefs and emotional disturbance. For example, Zurawski and Smith (1987) found a significant relationship between irrational beliefs and measures of emotional disturbance even when controlling for negative affect. Smith concluded that, 'improved assessment devices may produce more compelling evidence of correlations between beliefs and emotions'. However, there were also theoretical, as well as methodological weaknesses.

Theoretically, the major problem with earlier measures was that they were based on outdated definitions and descriptions of irrational beliefs. In particular, they relied on the

original list of eleven irrational beliefs (Ellis, 1962; Ellis & Harper, 1975). This list was meant to do little more than illustrate the types of 'self-defeating ideas' that lead to emotional disturbance and to describe broad categories of belief rather than serve as a definitive classification (Walen et al., 1992). Indeed, Ellis (1994a) notes that such beliefs might have been classified in many different ways. Although a new generation of belief scales were developed following the methodological criticisms, they continued to use the outdated model of beliefs. For example, the Malouff and Schutte Belief Scale (Malouff & Schutte, 1986) showed improved validity and avoided item wording referring to emotions (Warren & Zgourides (1989); Malouff, Valdenegro, & Schutte, 1987). Typical items are 'Life should be easier than it is,' and 'To be a worthwhile person I must be thoroughly competent in everything I do'. Yet the ten sub-scales reflect the outdated belief list and, as each sub-scale contains only two items, the scale is limited to a global measure of irrationality.

In the years following the original descriptions of irrational beliefs, two major theoretical developments took place. The first was the categorisation of beliefs into ego-disturbance and discomfort disturbance (Ellis, 1979a). The second was the conceptualisation of irrational belief from descriptions of content to four underlying process categories: Demandingness, need statements, self-worth, awfulising, and low frustration tolerance, with demandingness conceived as the core irrational belief. The distinction between rational or irrational beliefs was also made in terms of whether it involved a demand or a preference, rather than in terms of content. Furthermore, a distinction was more clearly made between absolute evaluative beliefs and those of inferential beliefs and distorted thinking, with Ellis (1977) arguing that inferences had a more minor role in the production of emotional disturbance. Wessler and Wessler (1980) suggested that beliefs may be described in the form of a syllogism, with a premise, 'I must pass my exams', and a conclusion, 'If I don't pass my exams it would mean I was a failure', that derives from this premise. Irrational beliefs were therefore represented by a combination of at least two beliefs processes. Muran (1991) has also argued that schema are expressed in the form of compound or conditional sentences. Thus, the structure of

an irrational belief consists of two parts: A primary demand ('I must succeed'), and a derivative belief, often termed a secondary belief (e.g. 'I can't stand it if I don't succeed'). Similarly, a rational belief consists of a primary preference ('I would like to succeed') and a secondary functional belief ('but I could tolerate not succeeding').

In relation to these theoretical changes, the Malouff and Schutte Belief Scale items are therefore a mix of different types of cognition. Only half of the items represent primary demands or derivative forms of irrational thinking. Some items are negative inferences and others are essentially preferences, for example 'I dislike having any uncertainty about my future', or refer to 'healthy' negative emotions, such as 'when it looks as if something might go wrong, it is reasonable to be quite concerned.' The earlier inventories had similar difficulties, for instance the IBT item 'I want everyone to like me' represents a preference and not an irrational demand. In summary, these scales confound the assessment of irrational beliefs by including items that measure rational beliefs and healthy emotions as well as other types of distorted but not irrational thinking.

## 2.3 EXPLORING BELIEF PROCESSES

One of the first inventories to focus on irrational processes and take into account changes in REBT theory was the Personal Beliefs Test (Kassinove, 1986). The Personal Beliefs Test avoided references to emotions and the items were grouped into six categories, one reflecting basic principles of REBT and others assessing irrational belief processes. Demandingness was divided into two categories depending whether this was self or other directed. The six sub-scales are:

1 Awfulizing ('The way some children behave is just awful')
2 Self-Directed shoulds ('When I make a mistake I usually tell myself, 'I shouldn't have done that')
3 Other directed shoulds ('My family should understand the pressure I'm under')

4 Low frustration tolerance ('I can't stand some of the things I see around me')
5 Self-Worth ('Being inadequate at a party would reduce my self worth')
6 Basic principles ('My feelings are largely determined by the actions of people around me')

Like the Common Belief Survey III, this scale attempted to reduce the effects of response bias by using reverse scoring methods. Thus, seven items in each category were stated in a negative direction (that is disagreement was scored as being rational) and three were reversed (agreement was scored as rational). However, this scoring method raises a number of theoretical issues regarding the relationship of rational and irrational beliefs. It assumes that disagreement with an irrational belief item indicates that the person holds a rational belief and vice versa. It also assumes that the greater the disagreement the stronger the alternative rational belief. However, disagreement with an irrational belief does not necessarily indicate that a person holds a rational belief, or its degree of strength. In addition, the use of reversed items has been generally criticised as leading to reduced reliability and careless responding (Schriesheim, Eisenbach, & Hill, 1991).

Research using this scale showed that the irrational beliefs score was moderately correlated with frequency of self-reported 'unhealthy' negative emotions, such as anxiety and depression (Kassinove, 1986). Unfortunately, irrational beliefs also correlated with 'healthy' negative emotions such as sadness and concern. Whilst, this supplies further evidence of the association of irrational beliefs with emotional distress these results do not support the REBT theory of separate healthy and unhealthy emotions.

The Personal Beliefs Test was later revised to form the Survey of Personal Beliefs (Demaria, Kassinove, & Dill, 1989). Analysis showed that almost all of the variance when relating the five irrational sub-scales with neuroticism could be explained by two predictors. These were self-directed shoulds and low frustration tolerance, supporting

the distinction between ego and discomfort disturbance. 'Other-directed shoulds', in contrast to the other sub-scales, was not significantly correlated with emotional disturbance, and this finding was replicated by Nottingham (1992). From these results, Kassinove (1986) argued that low frustration tolerance (LFT) and self-worth were the most important irrational beliefs to focus on. This conclusion was supported by further research by Kassinove and Eckhard (1993) who studied the relationship of self-reported negative and positive emotions and irrational beliefs on a sample of Russian and American students. The correlation of 'self directed shoulds' and all negative emotions was negligible (-0.18) and there was no significant relationship with 'other directed shoulds'. In contrast, LFT was the strongest sub-scale for the American sample (-0.48), with awfulising second strongest (-0.35). In addition, LFT had the highest sub-scale correlation with anger and depression, with awfulising the highest correlation with anxiety. Global self-rating had significant correlation with anxiety (-0.34) but no significant relationship with depression. On both awfulising and LFT, males scored higher than females. Kassinove and Eckhard conclude that 'we would be wise to consider the possibly greater importance of awfulising and LFT' in the cause and maintenance of emotional disturbance, rather than demandingness.

The importance of low frustration tolerance was further underlined by Chang and D'Zurilla (1996), who investigated the predictive discriminative validity of the five sub-scales in relation to depression and anxiety. Controlling for covariation among the sub-scales, two of these - self-worth and low frustration tolerance - were found to significantly predict psychological symptoms. The 'other directed shoulds' sub-scale was not significantly related to depression and, although correlated with anxiety, this was in the opposite direction to that predicted, with higher scores associated with less anxiety. Also against predictions, the self-directed shoulds sub-scale failed to correlate with emotional disturbance even before controlling for covariation. As the authors note, this raises two possibilities. The first is that the construct validity of the 'shoulds' scales is poor. Thus, although Ellis and his associates vetted the test items, Chang and D'Zurilla do not think that the items reflected the rigid and dogmatic quality emphasised

by REBT as characteristic of irrational beliefs. In particular, the word 'should' is open to a number of possible meanings (Vertes, 1971). In addition to the irrational 'absolutistic' use, 'should' can also be used as a preference, or conditionally, or as a recommendation or prediction. These other uses are rational and do not lead to emotional disturbance (Dryden, 1995c). Thus, the statement 'when I make a mistake I usually tell myself, 'I shouldn't have done that', used in the Survey of Personal Beliefs, could reflect either a rational preference or an irrational demand.

Due to this ambiguity, Chang and D'Zurilla (1996) suggest that the endorsement of the shoulds sub-scale items reflected commitment, rather than an absolute and rigid adherence to values. However, such a commitment may be adaptive, similar to the personality concept of 'hardiness' which incorporates elements of challenge, control, and commitment (Kobasa & Puccetti, 1983). Since this concept has been associated with reduced emotional stress it might explain the lack of association between some Survey of Personal Beliefs sub-scales and anxiety and depression scores. Alternatively, Kassinove (1986) suggests that demands on other people may often be complied with and therefore lead to little frustration for the person making those demands. A further explanation suggested by Chang and D'Zurilla is that demandingness is not central to all forms of emotional disturbance. Certainly, the separate belief processes do not correlate equally with measures of disturbance, possibly indicating that 'derivative' beliefs, such as low frustration tolerance, may be equally important.

These results also raise another important issue. That is, distinguishing between irrational and rational beliefs just based on the word 'should' is problematic. In therapy, distinguishing between irrational shoulds from strong preferences is often achieved by careful assessment of the context and the associations with other beliefs and emotional consequences (Neenan & Dryden, 1999). However, this is clearly not possible when using self-report questionnaires, and leaves open the possibility that endorsement of 'shoulds' may reflect rational preferences as well as irrational demands. To overcome this potential ambiguity, Robb and Warren (1990) suggested that test developers use the

term 'ABSOLUTELY MUST' to emphasis the absolutistic quality that defines irrational beliefs.

## 2.4 EXPLORING BELIEF CONTENT

Campbell (1988) had suggested a model whereby the four belief processes might be most usefully viewed as interacting with a specific set of content themes: Approval, achievement, and comfort. Burgess (1986), examined this interaction using an inventory that was composed of items representing both content and belief processes. That is, twelve statements combining the four processes with the three content categories. In addition, he studied the influence of self-referential versus non-self-referential statements, and specific versus generalised beliefs, on item endorsement. Each statement was then worded rationally or irrationally, self versus non self-referential, and focused versus overgeneralized. The resulting inventory, the Attitudes and Beliefs Inventory, was composed of ninety-six statements.

The inventory was given to eighty outpatients fulfilling DSM III criteria for generalised anxiety disorder, agoraphobia/panic, or dysthymic disorder (Burgess, 1990). Results indicated that patients were more likely to endorse irrational beliefs and could be differentiated from the non-clinical group. However, the clinical group also scored significantly higher than the normal group on rational beliefs. Burgess suggests that this could result from patients suffering more goal frustration than that of non-patients which would activate higher levels of *both* rational and irrational beliefs in the clinical group. Alternatively, the clinical group may be responding to both rational and irrational statements as having similar meaning in terms of demandingness. Although Burgess (1990) concluded from his results that 'the demand is the superordinate irrational belief', demandingness did not in fact distinguish between depressed or anxiety groups and a non-clinical group. However, the awfulising and LFT sub-scales did separate the clinical from the control group. Similarly, comfort statements were significantly higher in the agoraphobic group compared to the anxiety group, whereas approval and success items

did not distinguish between these groups. Self-worth was significantly lower in the anxiety and depressive groups. These findings suggest that, rather than demandingness being the central belief, that the other derivative beliefs may have important and specific interactions with measures of disturbance. As in Kassinove's research, beliefs relating to frustration intolerance were particularly salient.

In a further study using Burgess's scale DiGiuseppe and Leaf (1990) found that 'focused' items were more likely to be endorsed than 'overgeneralized' items, and 'self-referential' than 'non-self-referential' items. As Burgess had noted, overgeneralisation is also not a definitive feature of irrational beliefs. They suggested that 'over-generalized ' and 'non-self-referential' items are therefore best avoided in future studies. Rational beliefs were also best at distinguishing clinical from non-clinical groups. Therefore, DiGiuseppe suggests that rational beliefs are separate from irrational beliefs, rather than simply being on a continuum, and require to be assessed independently. Consistent with Burgess' study, patients endorsed rational more frequently than irrational items. DiGiuseppe and Leaf suggest that it was the 'rational' statement wording that lead to the increased endorsement of these items. They note that the so-called '*rational'* statements are more accurately described as '*preferential'* statements. Dryden (1995c) has described this type of 'rational' belief as *partial preferential statements* ('I prefer that people who are important to me like me') and distinguishes this from *full preferential statements* ('If people who are important to me reject me, I realise they don't have to like me, even though I want them to'). He argues that part-preferential statements can have an unvoiced demand and therefore can be endorsed as having an irrational meaning. DiGiuseppe and Leaf therefore argue that rational belief statements, in order to convey the correct meaning, should include both the preferential as well as 'anti-irrational' parts, and recommend that part preferential statements are best avoided in future scales because they are artificially inflate the correlations with emotional disturbance.

The General Attitude and Belief Scale (GABS II) was redesigned with seventy-two items with each representing a belief process, a content area, and with either rational or irrational wording (DiGiuseppe, Leaf, Exner, & Robin, 1988). In order to obtain conceptually distinct belief process sub-scales, definitions were written for each of the four types of irrational belief, and the inclusion of items vetted by experienced REBT practitioners. Examples of irrational LFT items for each content area are:

> "Its unbearable being uncomfortable, tense or nervous and I can't stand it when I am." (LFT/comfort)
>
> "I can't stand being disliked by certain people, and I can't bear the possibility their disliking me." (LFT/approval)
>
> "I can't stand not doing well at tasks that are important to me." (LFT/achievement)

It will be noted that frustration intolerance is used both as process and as content. Thus, LFT is the process category and 'comfort' used as the discomfort disturbance content category. The twenty-four items that relate to 'comfort' describe various combinations of feeling 'tense, nervous, and uncomfortable', having 'hassles and frustrations' or having a 'tough, and difficult life'. The criteria on which comfort items were included in the sub-scale were stated as beliefs reflecting 'the quality or unpleasantness of one's life, emotional states or hassles'. The GABS II was given to groups of students, outpatients, and drug rehabilitation inpatients (DiGiuseppe et al., 1988; DiGiuseppe, Robin, Leaf, & Gormon, 1989). Whilst these three groups significantly differed in terms of awfulising and self-rating they did not differ as regards frustration tolerance or demandingness. Whilst all sub-scales were significantly associated with measures of emotional disturbance and emotional well being the other sub-scales had stronger correlations compared to demandingness.

Theoretical, opinions are divided as to the best way of categorising irrational beliefs (Sutton-Simon, 1981). Whether they are best described by content or by the processes of awfulising, frustration intolerance, self-worth, and demandingness. A factor analytic

study of the attitude and belief scale had yielded one factor of irrationality accounting for 83% of the variance (DiGiuseppe & Leaf, 1990). However, due to the relatively small number of subjects the sub-scale scores themselves were used as items in the analysis, which can be argued as describing a second order factor. Shaw (1989), using the GABS with a student sample, obtained a four-factor oblique solution, with factors labelled: achievement, approval, comfort, and rationality. In a further analysis, Bernard (1998) modified the General Attitude and Belief Scale by the addition of items related to 'fairness', and differentiated this sub-scale from 'other downing'. Fairness had been one of the irrational beliefs on the original list ('the world should be fair and just'). However, Ellis (Ellis & Bernard, 1985) has argued that these two types of belief (demands for 'consideration' and 'other blaming') are facets of the same scale. Bernard describes the results of a oblique rotation as indicating a seven factor solution:

Factor 1 Rationality ('It is frustrating to be hassled but I can stand the frustration of being hassled')

Factor 2 Self-downing ('I believe that I would be a worthless person if I achieved poorly at tasks that are important to me')

Factor 3 Need for achievement ('I cannot stand not doing well at important tasks and it is unbearable to fail')

Factor 4 Need for approval (' I must be liked by important people, and I will not accept not being disliked by them')

Factor 5 Need for comfort ('I must have a pleasant life and I will not accept hassles when I don't want them')

Factor 6 Demands for fairness ('I must be treated fairly by people, and will not accept unfairness')

Factor 7 Other-downing ('I believe that if a person treats me very unfairly they are bad and worthless')

Thus, there were four factors corresponding to the content areas, two factors relating to self/other downing, and one factor related to rational beliefs. Again, it should be noted that the content areas include a mixture of belief processes items. For instance,

achievement has three items referring separately to awfulising, demandingness, and frustration intolerance. Most of the variance was accounted for by the rationality factor (34%), with all the other factors having less than 8%. However, factor extraction was based on eigenvalues greater than one, a method that is very likely to result in too many factors (Tabachnick & Fidell, 2000). More importantly, with the oblique rotation used in this analysis it is not possible to interpret the rotated sums-of-squared loadings in terms of proportion of variance, since the variance is shared between the correlated factors. Thus, the variance explained by rationality is an arbitrary general factor (Kline, 1994). In addition to these methodological errors, the number of items on the other downing scale is very small, and with only three items is at the lower limit of factor definition (Comrey and Lee, 1992). These weaknesses raise considerable doubts as to the factor solution and to Bernard's conclusion that consideration (fairness) and other-blame are separate factors. Unfortunately, individual factor loadings are not reported.

DiGiuseppe (1996) reports unpublished data using confirmatory factor analysis indicating that demandingness, LFT, and awfulising all loaded together on one factor whereas self-rating loaded as a separate factor. This is also consistent with Bernard's (1998) results in which self-rating emerged as being separate from 'absolutistic thinking'. These, and other studies, do not lend support to the hypothesis that demandingness is the primary belief. DiGiuseppe's study did not yield a separate factor of demandingness, and Joyce (1995) found demandingness was less strongly correlated to a measure of parental stress than the other irrational beliefs processes. Furthermore, she found that whilst the total irrationality score was significantly related to changes in trait anxiety, guilt, and self-downing the demandingness score was not. Greaves (1996) using multiple regression also reported that demandingness was a weak predictor of a measure of parental stress, with demandingness accounting for less than 9% of the variance compared to 40% of the variance accounted for by low frustration tolerance. Likewise, the research on the Child and Adolescent Scale of Irrationality also showed self-downing as distinct from demandingness (Bernard & Cronan, 1999).

## 2.5 DIFFERENTIATION BETWEEN FRUSTRATION INTOLERANCE AND EGO DISTURBANCE

The separation of frustration intolerance from ego disturbance is strongly supported both on conceptual and empirical grounds. However, these two categories of belief interact and overlap in terms of content (Ellis, 1979a). Frequently both ego and frustration tolerance themes are involved in primary psychological difficulties and in the inter-play of primary and secondary problems. For example, a fear of appearing foolish may primarily relate to low self-esteem and secondarily to intolerance of the associated anxiety symptoms. Furthermore, a person may have ego-disturbance beliefs regarding a discomfort theme. For example, 'I can't stand anxiety since it proves I'm such a weak person'. Alternatively, they may hold discomfort intolerance beliefs about an ego-related theme. For example, 'I can't bear to fail at tasks because it is so frustrating'. Dryden (1996) has pointed out that, because of this interaction, it is not possible to determine if a demand, by itself, refers to ego or discomfort disturbance. For instance, "I must not be rejected" could refer to intolerance of the frustration associated with rejection, or to a fear of appearing inadequate, or indeed both.

If this model is correct, then demand beliefs are insufficient in determining ego or discomfort disturbance. To do so, it is necessary to assess the contributions of both frustration intolerance and self-rating beliefs. As a rule of thumb, Dryden (1996) has suggested that if a self-worth belief is present and is relatively stronger than any frustration intolerance belief then the problem is one of ego-disturbance, and vice versa. Therefore, to separate these two categories of belief both self-worth and frustration intolerance beliefs need to be assessed for each irrational demand and their comparative strengths compared. Dryden also argues that awfulising beliefs do not help in determining if emotional disturbance is related to ego disturbance or frustration intolerance. Thus, an event could be evaluated as awful since it 'proves' personal inadequacy, or because the discomfort/frustration involved is deemed unbearable. The presence of an awfulising belief still requires frustration intolerance or ego beliefs to be

assessed. On the other hand others have suggested that awfulising beliefs are essentially interchangeable with frustration intolerance beliefs, and have equivalent meanings (DiGiuseppe, 1996). Existing irrational belief scales have not attempted to differentiate between the two categories of belief by comparative ratings.

## 2.6 ITEM WORDING

The importance of question design and wording is recognised as central to the creation of reliable and valid self-statement measures (Oppenheim, 1992). Guidelines in the literature emphasis that wording is ideally kept simple and the terms exact. Ambiguous, vague or biased words, such as double-barrelled questions and double negatives, are to be avoided (Conner & Waterman, 1996). It is also recommended that questions are kept relatively short, containing sentences of twenty words or less. Unfortunately, examination of current irrational belief inventories will show that many of these recommendations are lacking. An example of this can be taken from a recent questionnaire, the Ellis Emotional Efficiency Inventory (Ellis, 1999):

'I don't like depriving or harming others but if I had to do so to help or keep from harming myself, I would feel uncomfortable but not very guilty about depriving or harming them'.

Clearly, this statement has problems in terms of readability, ambiguity, and that it refers to several different aspects confusing the interpretation of responses. Similar problems occur in other scales, for instance, the Survey of Personal Beliefs (Kassinove & Berger, 1996):

'I can easily tolerate very unpleasant situations and uncomfortable, awkward interactions with friends'.

This statement refers to two areas of discomfort: Generalised 'very unpleasant situations' that might include a range of difficulties, and a more specific 'uncomfortable' social interaction. Furthermore, the reference to 'easily' tolerating discomfort

substantially modifies the statement and raises issues regarding the concept of frustration intolerance. The definition of high frustration tolerance refers to being able to withstand difficulty without becoming disturbed, rather than the ease of doing so.

REBT theory places considerable emphasis on language in determining disturbance and this clearly increases the difficulty in item wording. However, it is important to obtain a balance between the accurate representation of irrational belief process and comprehension. This is particularly the case regarding the content of beliefs, since with complex wording it becomes difficult to determine the important elements of the belief. Many existing scales display difficulties with readability and in using complex clauses and referring to different content areas in the one statement. For instance, the General Attitude and belief Scale has been criticised by participants as being too long and repetitive leading too difficulties with incomplete responding (Lindner, Kirkby, Wertheim & Birch, 1999).

## 2.7 EXPERIMENTAL STUDIES

A number of studies have used an experimental paradigm rather than traditional inventory assessment to investigate the interrelationship of irrational beliefs. Dryden and his colleagues (Dryden, Ferguson, & Clark, 1989; Dryden, Ferguson, & Hylton, 1989; Dryden, Ferguson, & McTeague, 1989) studied whether irrational beliefs, compared to rational beliefs, led to more dysfunctional inferences. Consistent with REBT theory, results indicated that inferences were more dysfunctional following rehearsal of irrational beliefs.

Bond and Dryden (1996a) extended this research to explore whether the content of beliefs, in addition to their irrationality (that is whether they reflected a demand or a preference), affected the functionality of inferences. They focused on the themes of control and certainty and examined how this content interacted with the two major categories of belief, that of discomfort disturbance and ego disturbance. In four separate

experiments, students were asked to imagine themselves role playing scripted scenarios, involving either a social or personal situation. During the role-play, the students were asked to hold different types of belief that represented the independent variables. These variables were (a) rational versus irrational beliefs, (b) discomfort disturbance versus ego disturbance beliefs, (c) control versus certainty beliefs. The dependent measure was the students rating of their agreement with fourteen inferences (e.g. ' To what extent will other people in the bar think that you are pathetic?').

The findings from these four studies supported the early experiments, in that students who held irrational, as opposed to rational beliefs, endorsed more dysfunctional inferences. Ego and discomfort categories did not interact with the rationality of beliefs to affect inferences. Whilst this was consistent with REBT theory, other results indicated that certainty beliefs had a greater influence on the functionality of inference than control beliefs (Bond & Dryden, 1996b; 1997). Control and certainty beliefs also interacted with the rational and irrational conditions. Thus, students who held certainty beliefs tended to show higher endorsement of functional inferences if this belief was rational, rather than irrational. However, there was no difference between these conditions with control beliefs. In other words, the inferences of students with control beliefs were as dysfunctional whether or not such beliefs were rational or irrational. In three of the studies, rational certainty beliefs produced more functional inferences than rational control beliefs. The authors conclude that beliefs regarding certainty have a greater effect on anxiety compared to those regarding control. They argue that these results run counter to REBT theory which emphases that belief processes, rather than content, are central in the generation of emotional disturbance.

Taking this further, Bond, Dryden, and Briscoe (1999) examined whether demandingness beliefs were sufficient in themselves to affect the functionality of inferences. Using the same imaginary role format students were asked to imagine holding one of four different beliefs. Two of these beliefs were rational/irrational primary beliefs (e.g. 'I must be certain of other people's opinion of me'). The other two

were rational/irrational derivative beliefs combined with the corresponding primary belief (e.g. 'I must be absolutely certain of other people's opinions of me; not having such certainty would make me an inadequate person'). This study therefore aimed to test whether demandingness needed to be combined with a derivative belief to result in dysfunctional inferences. As in previous studies, it was found that holding an irrational belief was more likely to result in dysfunctional inferences. However, results did not support the hypothesis that demandingness was by itself sufficient to affect the functionality of inferences. Rather, it seemed that a combination of secondary and primary belief was required. A further study was carried out to test whether the secondary belief by itself could affect inferences (Bond & Dryden, 2000). The rational and irrational secondary beliefs were either in combination with a demand, as in the previous study, or were reworded to stand alone. The results indicated that rational and irrational secondary beliefs affected the functionality of inferences to the same degree as the combined primary and secondary beliefs. In other words, it was not necessary for beliefs to refer to demands or preferences to affect the functionality of inferences.

Bond and Dryden (2000) conclude from these results that it is the 'secondary belief contents that constitute the primary mechanism through which rational and irrational REBT beliefs affect the functionality of inferences', rather than primary demands. However, another explanation is that secondary beliefs are more salient because their simplified wording is easier to understand compared to the full combined statements (Bond & Dryden, 1996a). For example, 'I must be absolutely certain of people's opinion of me; not having such certainty would make me an inadequate individual' may be compared to the straightforward secondary belief statement: 'If I am not certain of people's opinion of me, then I am an inadequate individual'. However, they note that even if this is true, it still leads to the same conclusion: that secondary belief statements are to be preferred both therapeutically and in assessment. Therefore, they suggest that irrational beliefs are best phrased in terms of secondary beliefs 'without mention of musts and preferences'. Bond and Dryden (2000) argue that these findings are more consistent with Cognitive Therapy which emphasises the role of belief content in

causing emotional disturbance, than with REBT theory that places demandingness in this primary position. However, one possible limitation to the studies was that the wording of belief statements involved 'must', rather than 'absolutely must' which may be confounded with preferences (Bond & Dryden, 1997).

## 2.8 GENERAL ASSESSMENT ISSUES

Similar methodological and conceptual problems have played a role in the failure of assessment of the Cognitive Therapy model (Coyne & Gotlib, 1986), and three basic problems have been noted (Weishaar, 1993). Firstly, the definition of schematic beliefs has been vaguely and inconsistently used. Secondly, the practical difficulty of measuring underlying beliefs has been underestimated. Thirdly, it is possible that the very nature of basic beliefs precludes assessment by self-statement questionnaires. Thus, Ellis (1994a) has emphasised that irrational beliefs are often 'preconscious' and require work in therapy to bring these to awareness. Bond and Dryden (1996a) have also noted, that clients may not be able to correctly identify their irrational beliefs without help, and once that help is given the reports will be biased by knowledge about the 'correct' response. Research regarding unconscious processing also suggests that often individuals have limited access to their higher-order cognitions and motivations (Nisbett & Wilson, 1977). In addition, both Ellis and Beck view the schemata operative during emotional episodes as latent structures activated by salient events. This implies that the assessment of beliefs outside this period, and therefore the investigation of underlying vulnerability, may be severely limited. However, Power and Champion (1986) have argued against the idea that schemata remain latent outside of activating situations. They suggest that dysfunctional beliefs, rather than being inoperative, continue to exert an influence outside of disturbed episodes, although the output from the schemata may be automatic and unconscious. These, processes may be resistant to introspection without some form of priming method (Power, 1990).

Three main areas have been examined in the Cognitive Therapy literature: That specific beliefs correspond to particular disorders, that underlying beliefs are associated with depression, and that these beliefs are not merely symptoms of depressed mood but represent enduring schemas constituting continued vulnerability. The Dysfunctional Attitude Scale (DAS) has been the most widely used instrument to assess these issues (Weissman & Beck, 1978). However, it has proved unsuccessful in providing evidence for vulnerability to depression, with recovered depressed patients and control group scores often found to be 'virtually identical' (Power, 1990). It is suggested that one reason for this failure is the use of the DAS as a global measure of disturbance. Apart from overlooking changes in specific areas of belief, global measures are likely to reflect both state effects as well as enduring traits and may therefore simply act as symptom indicators. This is related to 'mood congruity' effects, that is the tendency for people to selectively recall negative information when low in mood, leading to higher scores on 'global hedonistic' worded items (Clark & Teasdale, 1985). Similar, difficulties can be observed in REBT research regarding depression vulnerability. Thus, Solomon et al. (1998) found no difference between recovered and never depressed groups on irrational beliefs. However, they used the Malouff and Schutte (1986) Belief Scale, which only gives a global measure of irrationality and uses the older definitions of irrational belief.

These difficulties prompted the investigation of multidimensional versions of the DAS. Factor analysis of the original 100 item version has produced various factor models, including nine factors (Beck, Brown, Steer, & Weissman, 1991) and six factor solutions (Dyck, 1992). Calhoon (1996) using confirmatory factor analysis found that these models were not supported and proposed instead a three-factor model, with sub-scales labelled 'performance evaluation', 'need for approval', and 'imperatives'. She notes that the most robust factor seems to be that of 'imperatives', which would be consistent with REBT theory since the 'imperatives' sub-scale is conceptually similar to demandingness. Power et al. (1994) in comparing the factor structure of the two forms suggested a three-factor solution although there were differences between the two scales. The DAS-A factors were 'achievement', and 'dependency', the latter being primarily

concerned with approval. The third factor was more difficult to interpret but appear to represent a mixture of both approval and self-control statements. The DAS-B yielded an achievement factor, one concerning control over events and feelings, and a third factor possibly related to dependency. Achievement was the most robust factor to appear in both scales, with dependency and self-control only clearly represented in one or the other scale. From these results, a more rationally scaled version, the DAS-24, was developed. This was based on theoretically derived sub-scales and reflected content themes already highlighted in the literature. Thus, beliefs related to vulnerability to depression have been grouped into two main classes: 'self-critical' and 'dependent' (Blatt et al., 1982). Beck (1983) has also proposed the 'autonomous' and 'sociotrophic' personality types, referring to a person's investment in personal independence and achievement or in interpersonal acceptance. Power et al. (1994), in their revision of the DAS, included two factors related to domains of achievement and acceptance, as well as one related to self-control.

The finding of inconsistent results regarding the relationship between belief scales and emotional disturbance applies to other belief scales in addition to the DAS. For instance, using the Sociotropy-Autonomy Scale (Beck et al., 1983), a significant relationship has been shown between negative interpersonal events and sociotropy but no significant interaction between negative achievement events and autonomy (Nietzel & Harris, 1990). Likewise, evidence regarding the Multidimensional Perfectionism Scales (Hewitt & Flett, 1989; Frost et al., 1990) indicates that not all of the dimensions of perfectionism are implicated in emotional disturbance, with some sub-scales, such as 'Personal Standards' and 'Organisation', showing an association with positive coping. Two major scales have been developed to measure perfectionism both entitled the Multidimensional Perfectionism Scale. The Frost, Marten, Lahart, and Rosenblate (1990) scale has six sub-scales, that have been found fall into two further groupings (Frost, Heimberg, Holt, Mattia, & Neubauer, 1993). In the first group, concern over mistakes, doubts, parental expectations, and parental criticism, and in the second personal standards and organisation, although the latter was only weakly related to the other scales. Likewise,

Hewitt and Flett's (1989) scale has three sub-scales that fall into the same two groups: other-orientated and socially prescribed perfectionism in the first group and self-orientated perfectionism in the second. Research using these scales may be summarised as showing the first group of sub-scales to be consistently associated with a wide range of psychological disturbance (e.g. Hewitt & Flett, 1991). In contrast, the second group has often shown no association with disturbance or even a positive relationship with adaptive coping (e.g. Enns & Cox, 1999; Flett, Hewitt, Blankstein, & O'Brian, 1991).

This has led several theorists to propose that the items on these scales represent a mixture of functional and dysfunctional beliefs (e.g. Frost et al., 1993). In other words, the first group represents dysfunctional perfectionism and the second group, reflecting high standards, functional perfectionism. Thus, Frost et al. (1993) in a factor analysis of the sub-scales in both perfectionism scales labelled these groups 'maladaptive evaluative concerns' and 'positive achievement strivings'. There are several explanations as to why these sub-scales might differ in functionality. Firstly, Alden, Ryder, and Mellings (2002) have suggested that there are two elements to perfectionism: Demands for high standards and maladaptive self-appraisal. They argue that high standards by themselves are adaptive and it is only when these high standards are combined with fears of negative evaluation that dysfunctional perfectionism occurs. Certainly, examination of Frost's perfectionism dimensions indicates that for the 'concern over mistakes' sub-scale all the items, bar one, refer to self-evaluation. In contrast, none of the items, bar one, on the personal standards sub-scale refer to self-evaluation. The situation is more complex for Hewitt and Flett's scale since they suggest that, although self-evaluation is an essential aspect of perfectionism, the percieved ability to meet standards should be seperated from the desire for high standards (Hewitt et al., 2003). However, whilst not directly referring to self-evaluation it may be argued that the socially prescribed perfectionism sub-scale items strongly imply an underlying relationship with self-worth. Research findings support the conclusion that, compared to self-orientated perfectionism, socially prescribed perfectionism primarily reflects self-evaluation. For instance, fear of negative evaluation and poor self-esteem are found to be associated

with socially prescribed but not self-orientated perfectionism (Flett, Hewitt, & DeRosa, 1996). Likewise, concern over mistakes and doubts are correlated with social anxiety involving perceived weakness and personal inadequacy, but personal standards was not (Saboonchi & Lundh, 1997).

This is consistent with REBT theory that has emphasised the relationship between perfectionism, psychological problems, and global negative self-evaluation beliefs (Ellis, 2002). At face value, this could suggest that high standards, when not linked to negative self-evaluation, are adaptive. However, REBT theory also hypothesises that dysfunctional perfectionism can relate both to frustration intolerance beliefs as well as to self-worth beliefs. For instance, an individual can become angry at failing to achieve their best without necessarily believing that they are a failure. Given that both Hewitt and Flett's self and other orientated sub-scales, and Frost's personal standards subscale, refer to broader aspects of perfectionism it might be expected that these sub-scales would also assess frustration intolerance perfectionism. However, as noted above, the relationship of these two scales with emotional disturbance is inconsistent. Thus, self-orientated depression is most strongly associated with positive motivation and adaptive coping (Blankstein & Dunkley, 2002), although some evidence suggests this sub-scale may have specific relationships with disturbance, for instance, in mediating achievement stress and depression (Hewitt & Flett, 1993).

REBT would argue that one explanation for this inconsistency is that perfectionism is only dysfunctional when associated with demands that standards be met, not merely the desire for such standards. The latter represents an adaptive and flexible preference for high standards. Thus, only some items on the self-orientated perfectionism items are phrased in terms of demands, with other items phrased more neutrally ('It makes me uneasy to see an error in my work'). This is more apparent in Frost's personal standards sub-scale in which most of the items use positive or neutral wording ('I have extremely high goals'). Furthermore, as previously discussed, it has been argued that the use of 'musts' without additional qualification may also be construed as referring to a

preference (Robb & Warren, 1990). Therefore, the lack of item clarity in terms of preferences and demands may lead to adaptive and dysfunctional beliefs being confounded and the association with disturbance attenuated.

An additional explanation may be that demandingness when separated from self-evaluation is unrelated to emotional disturbance. In this respect, recent research has suggested that beliefs related to self-worth and frustration intolerance may be more important in determining dysfunctionality than demandingness (Bond & Dryden, 2000). This would mean that, to adequately assess each type of perfectionism, items need to be defined in terms of the consequences of failing to meet high standards, either by referring to self-evaluation or frustration intolerance. Indeed, Shafran, Cooper, and Fairburn (2002) argue that dysfunctional perfectionism is best defined as the pursuit of high standards despite adverse consequences. Similarly from a behavioural perspective, Terry-Short et al. (1995) have suggested that dysfunctional perfectionism involves the avoidance of negative consequences, whereas adaptive perfectionism involves the pursuit of positive outcomes. This has similarities to the definition of irrational beliefs, a central characteristic of which is the blocking of long-term goal attainment (Dryden, 1994a). Thus, Frustration intolerance might be defined as the intolerance of discomfort or frustration in spite of the awareness of negative consequences the individual wishes to avoid. In this regard, perfectionistic frustration intolerance relates to the belief that achievement failure cannot be tolerated, irrespective of beliefs regarding self-worth. It is important to note that some frustration intolerance beliefs may well refer to the self but not *self-worth* per se. For example, 'I must pass my exam' may refer to self-worth (...'because I would feel a failure') or to frustration intolerance (...'because I would have to resit the exam over the holiday, which would be an absolute pain'). Thus the second belief, whilst focusing on the self, is not globally self-condemning but rather involves intolerance of the discomfort of the additional work resulting from failure. Clearly, both types of belief may operate separately or in combination (Dryden, 1996).

Thus, the inconsistent evidence may reflect differences in the definition of dysfunctional beliefs, as well as in the failure to separate self-worth from frustration intolerance processes. This criticism may also apply to the Dysfunctional Attitude Scale. Indeed, Ellis (1987) has suggested the Cognitive Therapy model fails to distinguish between demands and preferences and therefore does not adequately separate healthy negative from unhealthy negative emotions and behaviour. In reply, it has been argued that this represents an oversimplification of Beck's theory (Marzillier, 1987), and clearly Cognitive Therapy does emphasise the importance of absolute beliefs within core schema. However, it is also true that the role of demandingness is not viewed as central to disturbance in Cognitive Therapy. For example, the item on the DAS-A 'what other people think about me is very important ' would be argued by REBT to describe a preference regarding important goals, and likely to result in adaptive concern rather than dysfunctional anxiety. Thus, although Beck et al. (1991) describe DAS items as aiming to reflect 'absolute language' including categorical imperatives, less than 10% directly refer to demands, and these are not phrased as 'absolute must' statements. Furthermore, although generalised wording (all, always, never) is classed as absolutistic on the DAS it is not regarded as definitive of irrational beliefs in REBT theory. Thus, many belief inventories, such as the DAS and perfectionism scales contain not only items that refer to demands but also to other types of cognition, such as overgeneralizations, inferences, and preferences. In this regard, it may be noted that Bieling et al. (2000) have distinguished two factors on the autonomy sub-scale described in terms of 'preferences' and 'control', with only the later related to emotional disturbance, where as both sociotropy factors were associated with disturbance.

Also important in relation to the present research is the lack of clear distinction between self-worth and frustration intolerance beliefs. Thus, on the DAS (Beck et al., 1991) the majority of items refer to self-worth, for instance with 85% of the DAS-A achievement items referring to self-worth. Power et al. (1994) note that the area of self-control has received relatively less attention compared to achievement and socially orientated beliefs. Thus, Brown and Beck's (1989) finding that the 'shoulds' sub-scale on the DAS

did not distinguish between anxious, depressed and general psychiatric disturbance is perhaps not surprising, given that the sub-scale includes beliefs referring to both self-worth and frustration intolerance, and to different types of belief within those categories. Likewise, Gilbert (1992) has argued that approval needs are closely involved with both achievement striving and interpersonal dependency and therefore these dimensions are not separate, as proposed by Beck (1983).

In summary, this present model suggests that a central requirement for investigating emotional vulnerability and cognitive specificity is the clear separation of frustration intolerance from self-worth beliefs and between the specific dimensions within these categories. This, and the lack of a clear distinction between preferences and demands in the wording of items, may explain the inconsistent research findings using the DAS and perfectionism scales.

## 2.9 SUMMARY AND CONCLUSIONS

Whilst some researchers have complained that changes in definitions and models of irrational processes has made research difficult (Wessler, 1996; O'Kelly, Joyce, & Greaves, 1998), these studies do enable some conclusions and guidelines to be drawn. First, there is considerable evidence that irrational beliefs are multidimensional, and that global measures of beliefs are insufficient (DiGiuseppe et al. 1988; Power, 1991). Secondly, research suggests that both content and processes are important. Although REBT has focused on belief processes the interaction with the content of irrational beliefs may be important in determining psychological disturbance (Bond & Dryden, 2000). Whilst opinions still differ as to the interrelation of belief processes, there is a consensus of agreement that self-worth and frustration intolerance beliefs are separate categories of belief. However, several studies have raised doubts whether demandingness is the central irrational beliefs. Evidence suggests that the derivative beliefs may be more salient and more closely related to emotional disturbance.

Certainly, demandingness has proved to be poor at discriminating between clinical and non-clinical groups, and in predicting outcome measures.

The re-emergence of interest in belief content follows the suggestion that irrational belief processes may not be specific to different psychological problems. DiGiuseppe (1996) suggests that demandingness could be associated with general negative affect whereas secondary beliefs determine the specific emotions and behaviours. This echoes the conclusion of Kassinove and Eckhard (1993) that further research might gain more from focusing on secondary irrational beliefs. However, the structure of these content dimensions remains elusive, with both self-worth and low frustration tolerance lacking any detailed analysis of their belief content. Thus, Neenan & Dryden (1999) have noted that descriptions of self-worth often seem to be subsumed in one 'scatological category... shithood', and similarly frustration intolerance often refers to a range of beliefs without coherent classification. They concluded that there is a need for the development of a non-ego disturbance scale and identification of the factor structure of this area of disturbance.

Several existing irrational belief inventories measure frustration intolerance along with other belief processes. Nevertheless, these scales are relatively poor at measuring self-control problems, such as anger, in comparison to anxiety and depression (DiGiuseppe, 1998). Outside of REBT, scales have often focused on issues relating to self-worth and do not adequately differentiate between ego disturbance and frustration intolerance. Overall, no belief scale exists that specifically aims to assess beliefs unique to frustration intolerance and scales that do incorporate frustration intolerance beliefs frequently treat this as a single dimension. Both the Survey of Personal Beliefs and the GAB II Scale contain frustration intolerance scales, but these include a mixture of beliefs regarding 'the quality or unpleasantness of one's life, emotional states or hassles' (DiGiuseppe et al., 1988). Whilst the GAB II does have separate frustration intolerance items for each of the content areas, (achievement, approval, and comfort) these only contain a small number of items. To adequately assess the range of beliefs contained within the

frustration intolerance domain requires a single questionnaire dedicated to this belief category. Power (1991), writing from a Cognitive Therapy approach has argued that individuals have circumscribed overvalued goals. For instance, depressed individuals will not necessarily endorse all types of dysfunctional belief, and therefore there is a need to assess specific content areas. A global rating scale is therefore too broad to capture these areas of vulnerability, and a multidimensional scale is likely to be the best means of investigating emotional vulnerability and beliefs (Power et al., 1994). However, they recommended that content areas should be based on theoretical rather than just statistical grounds. Clearly, this also applies to other types of disturbance and, in this respect, beliefs related to anger and self-control may be poorly represented in existing inventories. This review suggests that distinguishing between frustration intolerance and self-worth beliefs, and determining the content structure of these categories of belief, is central in clarifying the relationship with psychological disturbance.

This review also points to the importance of questionnaire design and structure. Item wording needs to closely reflect current REBT theory. In particular, the importance of specifying 'absolute musts' was highlighted, to prevent confounding with 'preferential shoulds.' Further, the contamination of belief measures with measurement of symptoms and emotion, and the use 'over-generalised ' and 'non-self-referential' items, are best avoided. Recent reviews of cognitive assessment have highlighted the methodological problems involved with simple self-statement endorsement methods (Clark, 1997). In particular, the ability of endorsement scales to measure underlying schematic beliefs has been questioned. Nevertheless, Glass and Arnoff (1997) conclude that endorsement questionnaires often remain the method of choice, having ease of administration, and good validity and reliability.

With regard to unconscious processes, DiGiuseppe (1996) has argued that demandingness might represent a more 'subtle, tacit irrational belief' that drives the secondary beliefs but not as open to conscious awareness. Therefore, secondary beliefs

may be more readily accessible compared to the underlying absolutistic beliefs. That is, demandingness may be expressed in everyday language by means of secondary beliefs. This suggests that irrational beliefs need to be described in terms of a compound sentence involving both the primary and secondary beliefs (DiGiuseppe, 1996). It also implies that that tests employing single sentence items are unlikely to provide an accurate measure of irrationality (O'Kelly et al., 1998). This was the approach adopted in the design of the preliminary Frustration-Discomfort questionnaire, with a compound sentence involving both a demand and intolerance belief. However, Bond and Dryden's (2000) more recent research suggests that secondary belief statements are to be preferred in assessment, and that irrational beliefs are best phrased in terms of secondary beliefs 'without mention of musts and preferences'. Based on this and the results of the preliminary scale research the revision of the Frustration-Discomfort questionnaire, described in chapter ten, used frustration intolerance beliefs without the demand.

Kendall and his colleagues, in reviewing the current status of REBT, outlined what they consider the most important future research priorities (Kendall et al., 1995). Foremost amongst these is the need to investigate whether specific irrational beliefs are associated with particular disorders. Whilst there are frequent reference to the central role that frustration intolerance beliefs play in a wide range of disorders, empirical evidence to support these theoretical claims is sparse. Existing scales, in treating these beliefs as unidimensional, do not allow the investigation of specific types of frustration intolerance. For instance, anger has been hypothesised as being associated with demands for fairness (Walen et al., 1992) and procrastination with intolerance of discomfort (Ellis & Knaus, 1977). Investigation of the relationship between diagnostic groups and irrational beliefs has also been limited by the use non-clinical samples. In this regard, Kendall et al. also emphasise the importance of obtaining discriminative validity, and in particular determining the contribution of irrational beliefs independent from general negative affectivity (Watson & Clark, 1984).

## 2.10 RESEARCH AIMS

1 The development of a multidimensional measure of frustration intolerance beliefs.

2 To provide preliminary evidence regarding the reliability and validation of this scale.

3 To investigate the specific relationship of frustration intolerance and its sub-scales to measures of emotional behavioural disturbance.

4 To differentiate the relationship between emotional disturbance and irrational beliefs from general negative affect.

5 To explore the relationship between the two proposed categories of belief: Ego disturbance and frustration intolerance.

6 To distinguish between ego disturbance and frustration intolerance in their relation to measures of disturbance.

7 To revise the Frustration-Discomfort Scale on the basis of these results and to test the factor structure, using confirmatory factor analysis.

# CHAPTER THREE

# DEVELOPMENT OF THE FRUSTRATION-DISCOMFORT SCALE

## 3.1 OVERVIEW

The previous chapters have discussed the theoretical concept of frustration tolerance and the assessment of irrational beliefs. What follows is the construction of an instrument to measure frustration intolerance beliefs and its empirical validation. One of the central requirements in developing a psychological measure is determining the validity of the measure. That is, whether it measures what it says it aims to measure, and not something else. Traditionally, this consisted of the investigation of content, construct, predictive, and concurrent validity. More recently, these strategies have been recognised as different aspects of the primary question of construct validity. Thus, various types of evidence are gathered to test whether the construct under examination is actually the construct being measured, with a cyclical process of validation involving model building, testing, and revision (John & Benet-Martinez, 2000). The present research follows this approach. Convergent and divergent validity, the evidence the scale is related to conceptually similar measures and unrelated to dissimilar measures, is examined by evaluating the Frustration-Discomfort Scale in relation to other constructs similar to frustration intolerance. In this regard, it is of primary importance that frustration tolerance beliefs are differentiated from those relating to ego disturbance. Discriminative validity was also evaluated in terms of clinical and non-clinical groups and between different types of psychological disturbance.

The research comprises two separate studies. The first reports the development of a preliminary Frustration-Discomfort Scale and the analysis of the factor structure using exploratory factor analysis. Following this, a series of validation studies were carried out investigating the relationship of the preliminary Frustration-Discomfort Scale with emotional disturbance, self-esteem, self-control problems, and therapy engagement.

Based on this evidence, the Frustration-Discomfort Scale was revised and, using two further population samples, a confirmatory factor analysis conducted and the validity of a shortened scale investigated. The development and analysis of the revised scale is reported in chapter ten. Both the preliminary and revised scales were also compared in a joint study on student procrastination. In order to preserve continuity, these results are reported in chapter eight prior to the description of the revised scale. A summary of the scale development process, and the population groups and measures used, is presented in figure 3.1.

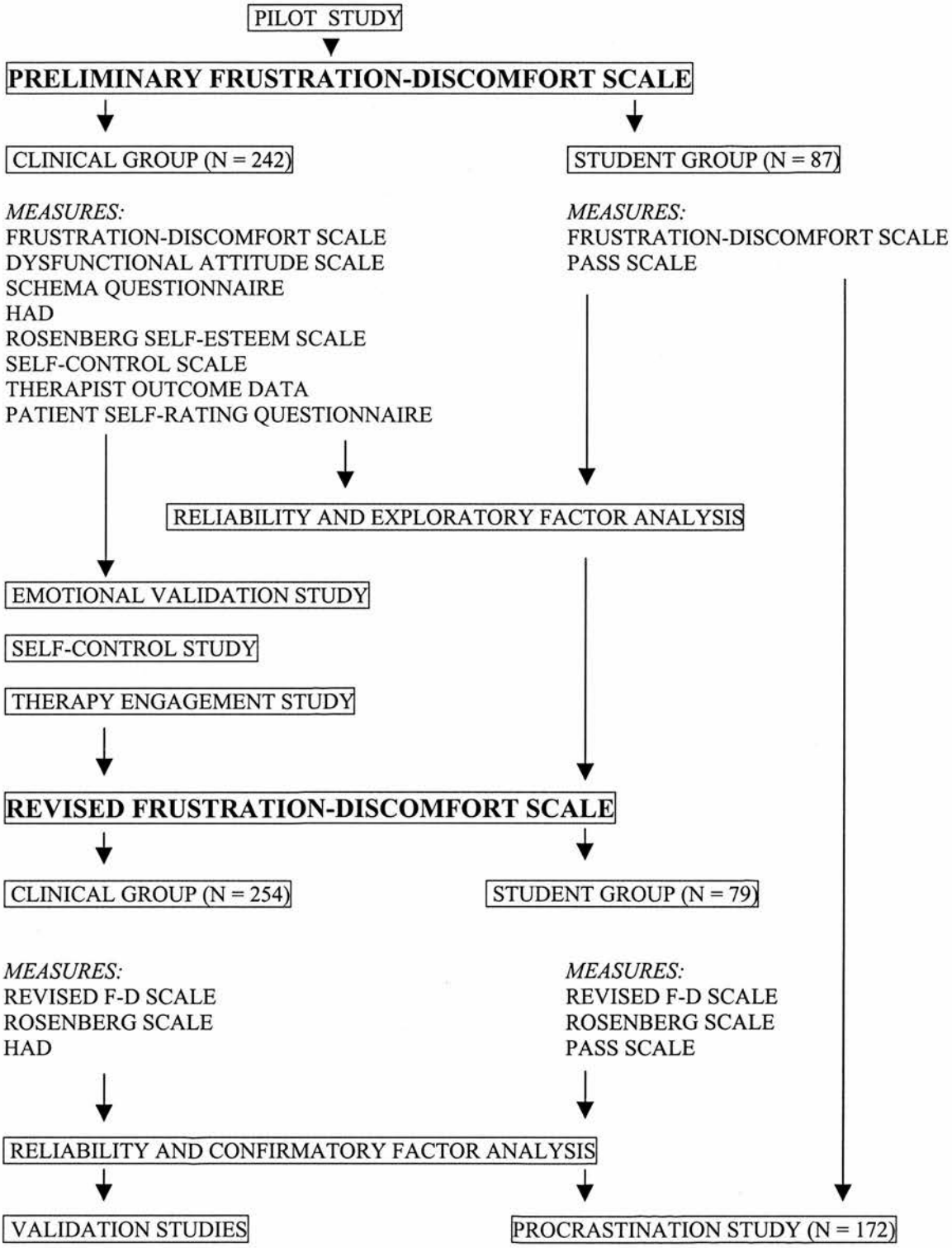
## 3.2 METHOD

### 3.2.1 PARTICIPANTS

In the preliminary and revised scale studies both clinical and student groups were employed. For the preliminary scale research, the clinical group comprised respondents from 587 consecutive referrals to the adult psychology department from North East Fife and Kirkcaldy districts. The clients were predominately outpatients with a small number of in-patients and day-patients. The non-clinical sample comprised 88 undergraduate psychology students taking final year honours courses in abnormal psychology. Following preliminary data analysis, 242 cases were included in the patient group and 87 in the student group. The response rate for the clinical group was 44% The mean age of the clinical group was 39.0 (range 18-74), with 39% men and 61% women. Gender of students was 30% male and 70% female.

The participants and procedure in the revised scale research followed that of the preliminary Frustration-Discomfort study. The clinical sample consisted of 573 consecutive patients referred to the adult psychology department. Of these 260 were returned, a response rate of 45.4%.

Figure 3.1 Summary of the process of Frustration-Discomfort Scale development and validation



The non-clinical population came from four samples of psychology students. Three of these were final year undergraduates, two from St Andrews and one Edinburgh University (n = 79). These groups were included with the clinical group in the confirmatory analysis. A further group of first year students (n = 49), sampled as part of the procrastination study, were included in the normative data and the discriminative analysis but, due to time constraints, not in the confirmatory analysis. Patient age and gender distribution was essentialy similar to the preliminary study, with 42% male and 58% female and mean age 37.2 (range 17-74). Student gender distribution was 17% male and 83% female.

### 3.2.2 PROCEDURE

Cross sectional data were gathered from the clinical groups using a questionnaire packet. For both clinical groups, the packet of questionnaires was included with notification of first appointment and stamped addressed envelope for reply. Ethical approval was obtained from Fife primary care NHS Trust prior to the research. A consent and information form was included in the package of questionnaires and is reproduced in appendix 5. For the student group, questionnaires were completed during classes as part of a course in abnormal psychology.

### 3.2.3 MEASURES

### 3.2.4 PRELIMINARY SCALE: CLINICAL GROUP

Given the length and complexity of the Frustration-Discomfort Scale an important consideration in selecting additional tests was brevity and reliability. In addition to the Frustration-Discomfort Scale, the following questionnaires were included in the packet given to patients. Where appropriate, specific measures are also described in more detail in the relevant chapter.

*TRAIT ANGER SCALE (TAS):* The Trait Anger Scale is a 10-item self-report scale that includes two sub-scales angry temperament and angry reaction (Spielberger et al., 1983). Each item is rated on a 4-point Likert scale reflecting how angry individuals generally felt. It was developed to assess components of anger in the normal and clinical population. Trait anger is defined as the 'disposition to perceive a wide range of situations as annoying or frustrating, and the tendency to respond to such situations with more frequent elevations in state anger more often and with greater intensity... Such persons are also likely to experience a great deal of frustration'. The angry temperament sub-scale has 4-items and measures 'a general propensity to experience and express anger without specific provocation'. The angry reaction sub-scale likewise has 4-items and measures the predisposition to 'express anger when criticised or treated unfairly'. The scale has good normative and reliability data, with a reported coefficient alpha of .87 and internal reliability from .81 to .91. A cut-point above the $75^{th}$ percentile, equivalent to $\geq 21$ for males and $\geq 22$ for females, is suggested as indicative of anger likely to interfere with functioning, and was used in the present study to classify clinical anger.

*ROSENBERG SELF-ESTEEM SCALE:* The wide use of this self-esteem scale (Rosenberg, 1965), its reliability, the lack of adequately researched alternatives, and its brevity made this scale and obvious choice. The 10-item scale is scored as a likert-type instrument. To enable easier comparisons with existing research (e.g. Marsh, 1996) high scores represented high self-esteem. Rosenberg reports satisfactory internal reliability (.87) and temporal stability (.86).

*HOSPITAL ANXIETY AND DEPRESSION SCALE (HAD):* The HAD is a 14 item scale used to measure anxiety and depression on two separate sub-scales, each containing 7 items (Zigmond & Snaith, 1983). Normative data suggests a cut-point of 11 or more for each sub-scale to obtain the best separation of cases from non-cases (Crawford, Henry, Crombie, & Taylor, 2001). It has been found a valid and reliable method for measuring the severity of emotional distress (Herrmann, 1997).

*SCHEMA QUESTIONNAIRE (IMPAIRED LIMITS SUB-SCALES);* The schema questionnaire was developed by Young (1990) to measure common maladaptive schema that he proposed formed the basis for emotional and personality disorder. It is a self-report inventory with each item rated on a six-point scale. Validation studies have found sixteen primary factors two of which, 'Entitlement' and 'Insufficient self-control', seemed relevant to the present study (Schmidt, Joiner, Young, & Telch, 1995). High scores on these factors indicate problems with 'making commitments, setting and meeting personal goals, and tolerating unpleasant emotional experiences' (Lee, Taylor, & Dunn, 1999). The self-control sub-scale in particular is viewed as reflecting difficulties with frustration tolerance and an 'exaggerated emphasis on discomfort-avoidance'. Nineteen items (5 for 'Entitlement' and 14 for 'Insufficient self-control') were taken from the 160 item revised version of the test.

*DYSFUNCTIONAL ATTITUDE SCALE (DAS-24):* The 'self-control' sub-scale from the short form developed by Power et al. (1994) was used. This has good reliability, validity, and a close relationship with full-scale DAS. The items on this sub-scale reflect the concept of demandingness and include beliefs assumed important in low frustration tolerance. For example, items refer to avoidance of risk, emotional control and being able to solve problems without effort. The eight items making up the sub-scale are rated on a 1 to 7 scale.

*COPING METHODS SCALE:* This is a self-report inventory developed for the present study to assess a range of dysfunctional behaviours. It is described in detail in chapter six.

*BACKGROUND INFORMATION QUESTIONNAIRE:* This self-report questionnaire was developed for the present study to measure a variety of relevant clinical background data and is described in chapter nine.

### 3.2.5 CHANGES IN MEASURES FOR THE REVISED SCALE

The clinical group received the revised Frustration-Discomfort Scale, Trait Anger Scale, the HAD inventory, and the Rosenberg Self-esteem Scale. As in the preliminary study, the student group received the Frustration-Discomfort Scale and the PASS inventory, but additionally completed the Rosenberg Self-Esteem Scale.

### 3.2.6 ADDITIONAL MEASURES FOR STUDENT GROUPS

*PROCRASTINATION ASSESSMENT SCALE-STUDENTS (PASS):*In addition to the Preliminary Frustration-Discomfort Scale, students completed the Procrastination Assessment Scale-Students (PASS; Solomon & Rothblum, 1984), the most commonly used measure of academic procrastination. This is described in more detail in chapter eight.

## 3.3 PRELIMINARY SCALE CONSTRUCTION

The preliminary Frustration-Discomfort Scale was developed over a nine-month period, with pilot work enabling modification of the questionnaire design, item wording, and item selection (appendix 2). The review of irrational belief assessment had highlighted a number of recommendations that were included in scale construction. General guidelines for questionnaire design, particularly regarding structure and wording of statements, were also followed.

## 3.4 ITEM WORDING AND STRUCTURE

### 3.4.1 DIFFERENTIATING THE TWO CATEGORIES OF BELIEF

The statement structure design aimed to reflect REBT theory. In particular that an irrational belief consists of two parts, a primary demand and a derivative belief (Ellis, 1989), and this is best expressed in the form of a compound or conditional sentence

(Muran, 1991; Wessler & Wessler, 1980; DiGiuseppe, 1996). Thus, the Frustration-Discomfort Scale statements consist of a demand ('I absolutely must not waste time') associated with one of two derivative beliefs: A frustration intolerance belief ('I couldn't bear to waste time') or a self-worth belief ('It would totally lower my self-esteem'). For example:

| | | | | | | |
|---|---|---|---|---|---|---|
| 24. I absolutely must not be kept waiting | | | | | | |
| Because | I can't tolerate waiting | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem | 0 | 1 | 2 | 3 | 4 |

The complex interaction between ego and discomfort disturbance presented the most difficult obstacle in the assessment of low frustration tolerance. If Dryden's (1996) model is correct, then demand beliefs are by themselves insufficient in determining whether a person is experiencing ego or discomfort disturbance and it is necessary to assess the contributions of both frustration intolerance and self-worth beliefs. As a rule of thumb, Dryden (1996) suggests that if a self-worth belief is present and is relatively stronger than any frustration intolerance belief then the problem is one of ego-disturbance, and vice versa. Therefore, to separate these two belief categories requires that both self-worth and frustration intolerance beliefs need to be rated for each irrational demand statement.

This was incorporated into the scale by asking respondents to rate both frustration intolerance and self-worth sub-statements connected with the demand. The use of 'because' to connect the sentences may suggest the derivative belief, rather than the demand, is primary. There were two reasons for using this structure. First, it was the best practical way of presenting the two types of disturbance in a questionnaire format. Secondly, it follows suggestions that derivative irrational beliefs, whilst not theoretically the primary belief, may nevertheless be most salient in everyday expressions of irrational thinking (Bond & Dryden, 1996; DiGiuseppe, 1996). Lastly, opinions are divided over the primacy of demands with suggestions that these may interact rather than be hierarchically ordered.

Item wording was constrained by the need to balance comprehension with REBT theory and the attempt to differentiate frustration intolerance from ego disturbance beliefs. As far possible the frustration intolerance wording was closely matched to that of the demand. Frustration intolerance phrases used were: 'I can't stand it' (59%), 'I can't bear it' (31%), 'I can't tolerate it' (5%), 'I can't go on' (1%), and 'I can't accept it' (1%). Clearly, accurately representing REBT theory, and in particular distinguishing between the two categories of disturbance, inevitably complicated the scale structure. Given this complexity, and the importance of respondents understanding the distinction between self-esteem and frustration/discomfort intolerance, the scale had detailed instructions that included examples. These instructions emphasised that responses to the two parts of the question may be quite different, and the distinction between being 'frustrated' and lowered self-esteem.

### 3.4.2 RATIONAL VERSUS IRRATIONAL BELIEFS

The simple model of therapy change suggests that irrational beliefs are displaced by rational beliefs during the process of disputation. However, more sophisticated models propose that conviction is transferred from an irrational belief to a rational alternative (Yapp & Dryden, 1995). Thus, existing beliefs are not removed but rather inactivated by the 'truth and validity' of the irrational belief being weakened and the alternative rational belief being strengthened. In other words, rational and irrational beliefs are not opposing ends of one dimension, and changing one belief does not automatically change the other (Ellis & Dryden, 1987). Rather, therapeutic change involves both challenging the irrational beliefs and constructing new rational beliefs. Therefore, opinion is divided regards the importance of including rational as well as irrational beliefs in an assessment inventory. DiGiuseppe and Leaf's (1990) results suggested that the strength of belief in rational beliefs best distinguished clinical from non-clinical groups. Thus, accurate assessment of the therapy process may require the measurement of both types of belief. However, other research has suggested that the absence of negative thinking is more important in coping than positive thinking (Glass & Arnkoff, 1997). Certainly on a

practical level, the inclusion of rational statements would double the number of items, substantially increase the size of the sample required for statistical analysis, and reduce user acceptability. Therefore, only irrational beliefs were used in the Frustration-Discomfort Scale.

### 3.4.3 SCALING METHOD

Considerable thought was given to the scaling categories since these held implications for the interpretation of scores. For instance, the Survey of Personal Beliefs uses an agree-disagree continuum. However, it is unclear as to what disagreement with an irrational belief statement means. It may indicate weak or absent irrational beliefs, or it could also imply strong rational beliefs. REBT hypothesises that rational and irrational beliefs are separate types of belief and are not just at different ends of the same dimension (Ellis & Dryden, 1987). Therefore, a weak irrational belief does not imply the presence of a corresponding strong rational belief, or vice versa. Furthermore, REBT theory proposes that both rational and irrational beliefs may be held simultaneously. Yapp and Dryden (1995) in their extended model of belief structure, suggest that rational and irrational beliefs are held with varying degrees of strength as well as at different levels of activity. They class activity on three levels: Dominant-active when the belief is powerfully held, concealed-active for a less strongly held belief, and passive for a weakly held belief. Dominant-active refers to a belief that is currently operational and creating emotional/behavioural dysfunction. Whilst a concealed-active belief is operational but masked by the dominant belief. For these reasons, the Frustration-Discomfort Scale is unidirectional rather than bipolar, and ranges from absent to very strong. This avoids problems with the interpretation of belief agreement/disagreement and enables the separation of irrational from rational beliefs.

A related issue concerned the dimension on which belief statements are best scaled. A distinction has been made between 'intellectually' agreeing with a belief and 'emotionally' accepting the belief, with Ellis (1979b) arguing that this is determined by

the strength and frequency with which a belief is held. That is, 'intellectual' as opposed to 'emotional' agreement indicates weakly held rational beliefs. On the other hand, Hauck (quoted in Yankura & Dryden, 1994) suggests this distinction reflects conviction versus understanding. Other dimensions have also been suggested, including thought frequency and how rigidly or dogmatically the beliefs are held (Kendall, et al., 1995). However, this raises the question as to how concepts such as rigidity and conviction are operationally defined. It was decided to use 'strength of belief' as the scale dimension since this is one of the criteria described in REBT, and avoids some of the difficulties inherent in estimations of frequency. Respondents were asked to rate their strength of belief on the two statements, using a five point Likert scale, since the reliability and validity of unipolar scales appears to be optimal length at around 5 points (Wilkman & Warneryd, 1990). The categories used were, absent, mild, moderate, strong, and very strong.

### 3.4.4 ITEM REVERSAL AND VALANCE

Consideration was given to the use of reverse-scored items as a means of reducing response sets and acquiescence. However, simple item reversals were problematic in that changing 'I can't stand it' to 'I can stand it' alters the statement from an irrational to a rational belief. As noted above, rational and irrational beliefs are best considered separate processes. Furthermore, although conventional wisdom suggests using reversed negatively worded items to reduce response bias, such as acquiescence (Nunnally, 1978), this comes at a cost. Reversed negatively worded items are difficult to write without increasing the complexity of the question and making interpretation more difficult. Deciding whether a negatively worded question is untrue (e.g. 'Do you disagree that 'I feel I do not have much to be proud of') is cognitively complex and tiring for respondents, particularly in a long series of items (Wason, 1961).

It is also debatable whether reversed items are useful in reducing measurement error, indeed there is evidence that they may increase such problems. Bond and Dryden (1997)

noted that the use of reversed questions in their study might have lead to confused responses although respondents were specifically warned of this arrangement. Benson and Hocevar (1985) compared reversed item, regular, and mixed item scales and concluded that mixed items reduced response validity. Similarly, Schriesheim, Eisenbach, and Hill (1991) found in their study of questionnaire reliability that regularly worded items were the most reliable, whereas the inclusion of polar opposites or negated polar opposites severely reduced reliability. They concluded by asking why item reversal methods in questionnaire design continued to be recommended, given the lack of empirical support. Furthermore, there is evidence that reversed items may produce spurious sub-scales. Schmitt and Stults (1985), using the Rosenberg self-esteem scale, showed it required only ten percent of respondents to mistakenly answer negative questions the 'wrong' way to produce a separate reverse-scored factor.

Neither are reversed items necessarily a cure for acquiescence, since this method will only average acquiescence scores, which is itself not an accurate assessment of beliefs (Kline, 1992). Moreover, it will only do so if both negative and positive reversals are equivalent which is not the case when considering rational and irrational beliefs. Kline argues that, whilst it is important to be aware of the danger of response sets, the influence of acquiescence can be overlooked if a test shows clearly demonstrated validity. The same applies to social desirability as long as items are avoided with obvious desirability or very unequal response splits.

Bond and Dryden (1997) found that reversing scale direction in their studies represented a major weakness, noting that this reversal may well have resulted in confused responses although students were warned of this arrangement. Overall, they recommend avoiding reversed scales and suggest using scales with equal numbers of positive and negative worded items as an alternative. This option was explored with Professor Dryden during an initial meeting to discuss the development of the scale and a preliminary questionnaire was constructed with equal positive and negative items. That is items

involving avoidance of discomfort/frustration as opposed to those involving loss of comfort/goals. For example, typical items from this scale were:

'I absolutely must be treated fairly. I can't stand it if I'm not'

'I absolutely must not be treated unfairly. I can't stand it if I am'

and,

'I absolutely must be relaxed. I can't stand not being calm'

'I absolutely must not feel anxious. I can't stand such feelings'

However, a number of problems became apparent when developing this version of the questionnaire. First, a major constraint was the size of the inventory if both negative and positive items were included in the scale. The original eighty items would have grown to a somewhat unwieldy one hundred and sixty. Secondly, the complex wording required by REBT theory made writing equivalent items in both negative and positive forms tortuous, with difficulties arising from the use of double negatives. The complexity of the sentence structure and the perceived similarity of the questions also risked reducing acceptability. Furthermore, the focus of the questionnaire was primarily that of Frustration-Discomfort intolerance rather than the broader concept of non-ego disturbance. The evidence discussed in chapter one suggested the primary focus for frustration intolerance was negative and avoidant rather than the pursuit of positive gratification. For these reasons, negatively worded items were used in preference to positive worded items. However, valence remains an important issue in frustration intolerance particularly regarding the relationship of immediate positive gratification with other areas. For this reason, a specific group of items was included that related to positive gratification.

### 3.4.5 ITEM SELECTION AND GENERATION

To adequately explore the underlying structure of a construct, and satisfy content validity, all relevant aspects of the construct need to be included in the item pool. To avoid potential problem resulting from restricted sampling of domains two methods were used to guide this process. First, an extensive search was made of the literature for examples of frustration intolerance, particularly using recent articles and publications (e.g., Dryden & Gordon, 1993; Ellis, 1996a). An important guide to the potential range of beliefs involved in frustration intolerance was the list compiled by Neenan and Dryden (1999) detailing forty-four different types of non-ego disturbance. The use of a pre-publication copy of this article enabled items corresponding to most of the categories to be included in the final questionnaire. Secondly, five existing belief categories were employed as a framework (Bernard & DiGiuseppe, 1989; Ellis & Dryden, 1987). The content areas used were achievement, affiliation, comfort, fairness, and control with the additional category of positive gratification (Dryden & Yankura, 1993). Beliefs worded in terms of an individual 'never experiencing happiness again' were not included in the scale. As discussed in chapter one, it is debatable whether such beliefs are more definitive of awfulising rather than frustration intolerance, although clearly both categories of irrational belief are closely interrelated.

In order to obtain a reasonable sample of items for each domain, items were categorised into six sub-scales based on their content. However, whilst REBT theory offers a framework for the classification of irrational belief content there is little empirical evidence to guide the placing of individual beliefs. There are no clear definitions of content areas, and no previous analysis of the factor structure of frustration intolerance beliefs. Therefore, the following descriptions of content areas served as only provisional definitions to guide initial selection.

**Affiliation:** Intolerance of the frustration or discomfort involving relationships

**Fairness:** Intolerance of unfair circumstances or treatment

**Comfort:** Intolerance of uncomfortable situations or experiences

**Achievement:** Intolerance of the frustration involving achievement goals

**Gratification:** Intolerance of delayed gratification

**Control/Certainty:** Intolerance of lack of control and uncertainty

Clearly, the categories are not exclusive making the theoretical classification of items difficult. To try to systematise this process, six clinical psychologists experienced in cognitive behaviour therapy categorised the items in terms of the proposed content areas. However, agreement regarding many items proved elusive, with 36% of items placed in more than one category. Most overlap occurred between the control, achievement, and discomfort categories, and between those of gratification and discomfort.

A further potential problem in item selection is the use of redundant items with similar meanings and wordings. Such items will tend to correlate together and form factors termed 'bloated specifics' (Cattell, 1978). Since they represent groups of statements that are essentially paraphrases of one another, they will reflect specific variance rather than meaningful relationships within a group of variables. Whilst closely associated items allow a more precise measurement of a specific construct it is at the cost of a loss of generality. This 'bandwidth-fidelity trade off' (Cronbach & Gleser, 1957) means that to measure a broader construct a larger number of items need to included. Close attention was to item redundancy as well as the REBT model regarding structure, wording, and item content. As a leading authority on REBT, Professor Dryden reviewed the initial questionnaire to help insure correspondence of structure and content with REBT theory,

leading to revision of question wording and layout. As a further check on content validity, Albert Ellis was also asked to comment on the questionnaire wording and content range, which he thought 'investigated the most important aspects of discomfort intolerance' (personal communication).

## 3.5 PILOT STUDY

### 3.5.1 PROCEDURE

A pilot study, with twenty out patients referred to the clinical psychology department, used a pilot questionnaire that was the product of a number of previous revisions (appendix 3). Ten of these clients completed the questionnaire within an interview format to obtain direct feedback regarding possible difficulties in comprehension and ease of use. Based on the pilot study analyses several items were removed or reworded.

### 3.5.2 FREQUENCY ANALYSIS

The overall distribution of scores is shown in figure 3.2. The item frequency distributions across the five-point scale were examined, particularly those items with extreme positive ratings, since item scores for a clinical population were expected to show a negative skew. Sixteen items had frequency distributions below the twentieth percentile in the two lowest categories. Seven of these items had frequency distributions with more than 40% of their scores in the absent or mild categories (table 3.1). Whilst none of these items displayed extreme frequency problems, that is less than 10% of responses on two adjacent points, the results did suggest that the content of these items was too specific and they were removed. The scores of five other items below the twentieth percentile: Q(58) persistence, Q(38) weight control, Q(7) sacrifices, Q(53) let down, and Q(61) gratification delay, showed a more even distribution and were retained in the scale. Four other items, referring to discipline, routine, parental inattention, and change, were replaced because of wording and redundancy difficulties.

Figure 3.2 Distribution of item scores in pilot study

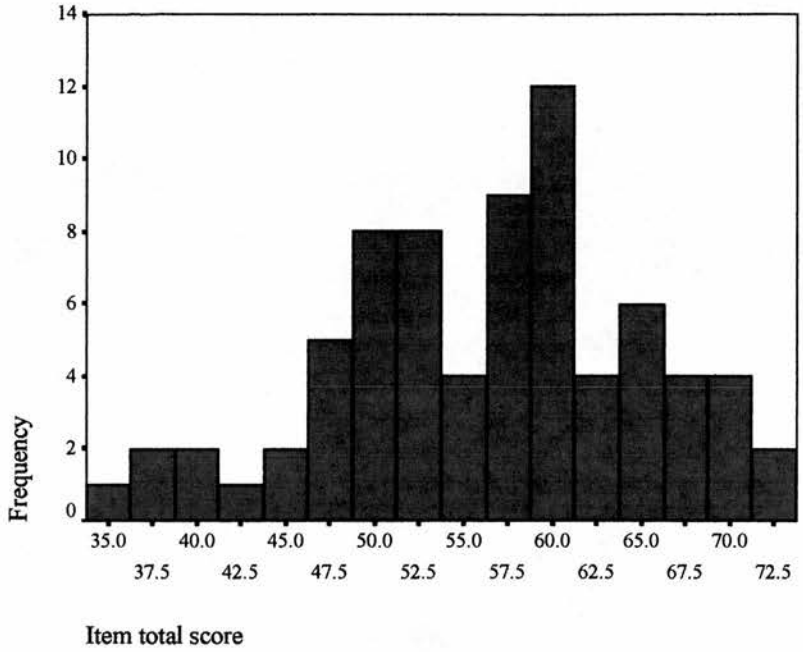


Table 3.1 Percentage frequency distributions for eliminated items

| | Absent | Mild | Moderate | Strong | Very Strong |
|---|---|---|---|---|---|
| I absolutely must not come into contact with things that are unclean<br>I can't stand it | 50 | 17 | 22 | 11 | 0 |
| I absolutely shouldn't have to face problems<br>I can't stand having to do so | 44 | 28 | 11 | 5 | 11 |
| I absolutely must not have a hard time getting what I want<br>I can't stand such difficulties | 23 | 47 | 12 | 12 | 6 |
| My parents absolutely shouldn't have been so unaffectionate<br>I can't bear that they were | 41 | 18 | 23 | 0 | 18 |
| My parents expect that I absolutely must not fail<br>I can't stand failing to meet such demands | 41 | 22 | 16 | 11 | 11 |
| I absolutely must not be uncertain about physical symptoms<br>I can't stand being unsure | 41 | 6 | 18 | 23 | 12 |
| I absolutely shouldn't have to go to bed or get up when I don't want to<br>I can't stand having to shift | 17 | 41 | 11 | 11 | 17 |

### 3.5.3 ITEM REVISION

The pilot study resulted in the retention of forty-three items with little or no alteration, and the addition of twenty-one new or rewritten items. The initial instructions were also revised to clarify the distinction between frustration and ego-disturbance. The final version of the Frustration-Discomfort Scale consisted of seventy-four items. The following items were reworded or replaced to increase generality, reduce difficulties in comprehension, avoid double negatives, ambiguous meaning, compound questions, and redundancy.

The past absolutely must not be left unexplained. I can't stand being in the dark

*'I absolutely must have an explanation. I can't stand being in the dark'*

I must not change how I am. I couldn't bear to be 'phoney'

I absolutely must not experience too much change. I can't tolerate it

*'I absolutely must not change myself. I can't bear the discomfort of change'*

I absolutely must not have to do things I dislike. I can't bear the hassle

*'I absolutely must not do things that could be upsetting. I can't stand being upset'*

I absolutely must not have too much routine. I can't stand it

*'I absolutely need excitement in my life. I couldn't stand a lack of excitement'*

*'I absolutely must have the buzz I need. I can't stand being deprived of this'*

I absolutely shouldn't have to discipline myself. I can't stand giving myself a hard time

*'I absolutely need to indulge myself. I can't stand being deprived of enjoyments'*

I absolutely must not have worries. I can't stand being disturbed by such thoughts

*'I absolutely must not have certain thoughts. I can't bear such thoughts'*

People close to me absolutely should not have left me. I can't bear that they did

*'Close relationships absolutely must not end. I couldn't bear to start again'*

My parents absolutely should not have been so overprotective and restrictive.
I can't bear that they were

*'Other people absolutely must not restrict me. I can't stand it if I am restricted'*

Other people absolutely must not cause me extra problems. I can't bear it they do

*'I absolutely must not experience extra problems. I couldn't stand any more problems'*

I absolutely must not waste opportunities. I can't bear to do so

I absolutely shouldn't have wasted so much time in the past. I can't bear to think I did

*'I absolutely must not waste time. I can't bear to waste time'*

I absolutely must not risk making important mistakes. I couldn't tolerate that

I absolutely must not be prevented from achieving my best. I can't stand to be frustrated in this

*'If a job is worth doing, I absolutely must not fall short. I cannot accept lower standards'*

My parents absolutely shouldn't have been so belittling. I can't stand it

My parents absolutely should not have been so disapproving. I can't bear that they were

I absolutely must not feel uncared for. I couldn't bear to feel that way

I absolutely should not have been taken for granted. I can't stand that I was

I absolutely should not have been so unappreciated. I can't stand to be treated so unfairly

Those close to me absolutely must not be inattentive. I can't bear to be ignored

I absolutely must not be taken advantage of. I can't tolerate it

*'I absolutely must not be overlooked. I couldn't stand such unfairness'*

*'I absolutely must not be taken for granted. I can't stand being unappreciated'*

## 3.6 ANALYSIS OF THE FRUSTRATION-DISCOMFORT SCALE

### 3.6.1 RESPONSE RATES

The response rate is important in any survey but was of particular interest in the present study, in that frustration intolerance was hypothesised to be associated with poor therapy engagement and procrastination. This potentially might reduce response rates of those individuals with high frustration intolerance. Therefore, methods of improving response rates were explored: The literature on this subject suggests that important influences are reminders, introductory letter stating study aims, reassurance regarding confidentiality (Conner & Waterman, 1996). Therefore, information regarding the confidentiality and the purpose of the questionnaire were included in a covering letter. The readability scores for the scale was 64% on the Flesch reading ease formula and a 6.2 Flesch-Kincald reading grade, equivalent to an eleven year old British reading age, and within the recommended levels for comprehension of standard documents. Follow-up letters were sent to the first hundred clients, but generated few additional replies. Analysis of the total replies confirmed that the response rate with follow up letter (45%) was not significantly different to overall returns This was not continued due to the additional administration incurred.

There was a possibility that the length and number of questionnaires might reduce response rates. However, the clinical group response rate was 44% (257 replies), comparable to response rates from postal studies in other psychology departments. For example, Ambrose, Button, and Ormrod (1998) report a 42% reply rate. Turvey et al. (1998) conducted a postal survey of consecutive psychology referrals in North East Fife and obtained a reply rate of 46% post treatment. He compared non-responders, on diagnosis and demographic characteristics, with responders and with all cases referred to the Fife adult clinical psychology department over the previous two years. Results concluded that the differences between these two groups were minor. However, whilst this indicates the responders are a representative clinical sample differences may still

exist between this group and non-responders as regards low frustration tolerance. Therefore, more detailed analysis of this group is reported in chapter seven.

### 3.6.2 MISSING DATA

Inspection of the pattern of missing data indicated that this was randomly spread across the items. The mean percentage number of missing values for each item was 0.32%. Only three items had more than 1.0% missing values: Q(36) comfortable and Q(6) powerlessness with 1.2%, and (31) emotional neglect with 1.8%. Nine cases with more than 10% of missing values were removed from the study (eight from the patient group and one from the student group). Since remaining cases contained only a small percentage of missing data, a group mean was to avoid loss of cases.

### 3.6.3 OUTLIER IDENTIFICATION

Six extreme positive outliers were found, three of which had unusual patterns of scoring on other tests in the battery, suggestive of either response set, inaccurate understanding of instructions, or poor motivation. These were removed from the analysis. The remaining three positive outliers were retained as members of the population. Of three negative outliers, two were removed on similar grounds.

### 3.6.4 SCORING METHOD AND ANALYSIS

As discussed above, the design of the scale had included both a self-worth and frustration intolerance statement, connected to a demand, for each item. This aimed to identify the category of belief to which the irrational demand referred, since in theory a belief describing discomfort or frustration may actually involve issues of self-worth. However, combining the scoring of these two statements proved extremely difficult. Several methods of weighting frustration intolerance scores to take into account the corresponding level of self-esteem were investigated, but these did not show meaningful

results. Indeed, a simpler solution was to screen for items that were clearly more associated with issues of self-worth rather than frustration intolerance. Whilst this may overlook specific situational differences in beliefs it was not thought to be a major limitation since the scale was designed to measure core underlying beliefs. Furthermore, analysis of individual items indicated that most showed a substantial relationship to frustration intolerance compared to self-esteem (table 3.4). Therefore, only the frustration intolerance scores were used, and scores from the self-esteem statements were not employed in the analyses.

## 3.7 RESULTS

### 3.7.1 DESCRIPTIVE STATISTICS

With 15 cases eliminated due to problematic or missing data, 242 cases were included in the patient group and 87 in the student group for statistical analysis. The mean age of the patient group was 38.77 (SD 13.22), with a range between 18 and 74, consisting of 95 men (39.3%) and 147 women (60.7%). Whilst for the student group ages were not obtained, all came from a final year undergraduate course in which most students were aged 20 or 21. Gender distribution showed 22 men (25.3%) and 51 females (58.6%), with 14 (16.1%) missing.

The means and standard deviation are presented in table 3.2. Kolmogorov-Smirnov tests were non-significant, indicating normal distributions, for clinical, student and combined groups. Likewise, kurtosis and skewness statistics were within acceptable limits (table 3.3). Figures 3.3 to 3.5 show the histograms of the total Frustration discomfort scores for the different groups. There was no significant association between the full scale and age ($r(240) = -.06$, ns) or gender ($t(313) = .23$, ns)

Table 3.2 Descriptive statistics: Frustration-Discomfort Scale

| | Mean | SD |
|---|---|---|
| Combined | 140.28 | 50.82 |
| Clinical | 148.79 | 51.60 |
| Student | 116.56 | 40.23 |

The kurtosis and skewness statistics for each item indicated that nearly half the items could be classed as having a non-normal distribution based on a standard score outside the –2 to +2 range (appendix 14). Whilst in larger samples moderate deviations from normal in skewness and kurtosis do not have a substantive effect on statistical analysis (Tabachnick and Fidell, 2000), three items did have quite extreme skewness scores above 0.7: Q(4) diet control, Q(7) sacrifices, and Q(51) self-change.

Table 3.3 Normality statistics: Frustration-Discomfort Scale

| | Skewness | SE Skewness | Z-Value | Kurtosis | SE Kurtosis | Z-value | K-S Statistic |
|---|---|---|---|---|---|---|---|
| Combined | .09 | .13 | .70 | -.48 | .27 | -1.78 | .20 |
| Patient | -.08 | .16 | -.53 | -.42 | .31 | .00 | .20 |
| Student | .24 | .26 | .93 | -.44 | .51 | -.86 | .20 |

Figure 3.3 Distribution of Frustration-Discomfort scores: Combined group

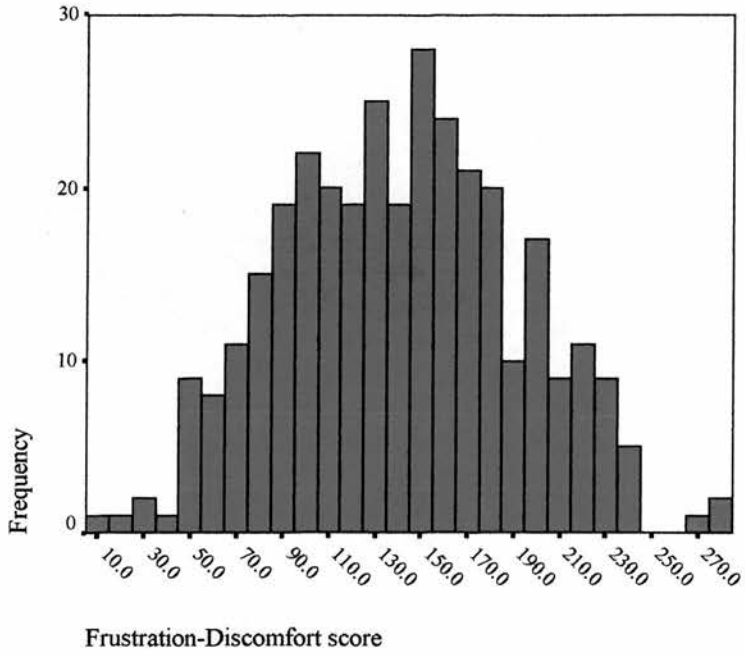



Figure 3.4 Distribution of Frustration-Discomfort scores: Patient group

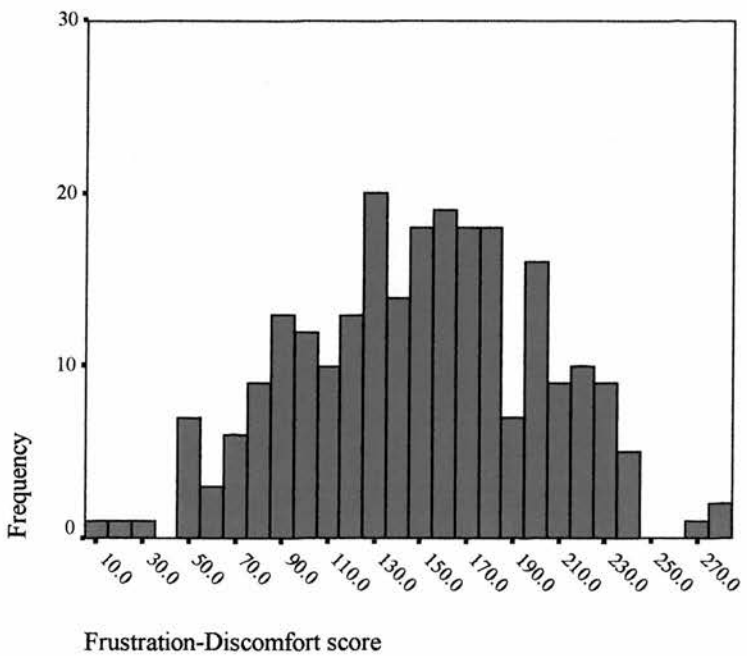
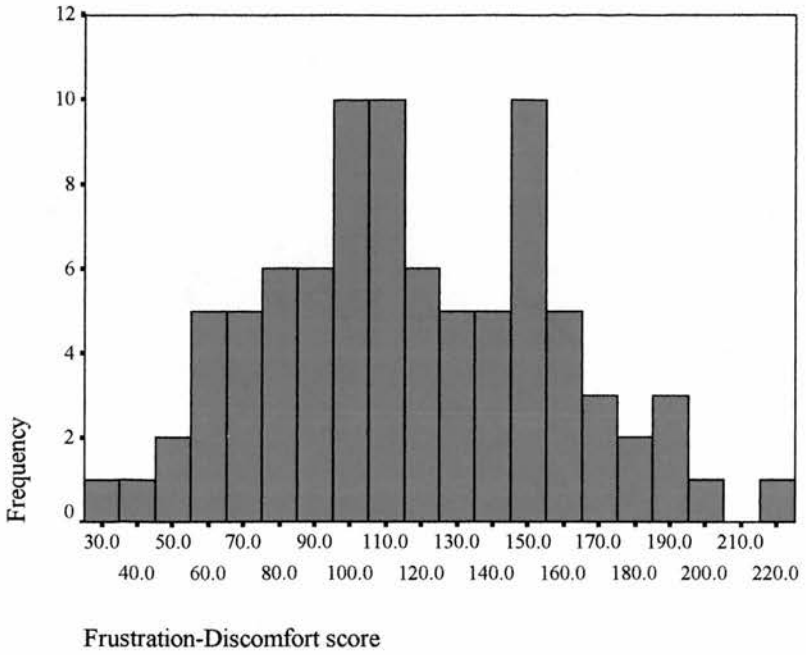


Figure 3.5 Distribution of Frustration-Discomfort scores: Student group




### 3.7.2 PRELIMINARY ANALYSES

A series of preliminary reliability, frequency, and correlational analyses were conducted to identify items that were inappropriately included in the scale due to problems in these areas.

### 3.7.3 FREQUENCY ANALYSIS

Frequency analysis was used to examine the distribution of responses across the five point rating scale for each frustration question. It has been recommended that dichotomous scales should have at least a 90-10 split to avoid frequency problems due to skewness (Kline, 1992). This criterion has been adapted by other researchers so that items have been deemed to have frequency problems if any two adjacent scale points on each item have less than 10% of responses (The WHOQOL group, 1998). Whilst none of the items failed this criterion, examination of the frequency distributions showed that several items were very negatively skewed (appendix 15). Thus, Q(51) self-change and

Q(4) diet control had 51% of the replies in the 'absent' category, and items Q(47) emotional neglect and Q(7) sacrifices had 47% and 45% respectively. Additionally, items Q(21) buzz, Q(36) comfortable, Q(37) taking time, Q(52) emotional deprivation, and Q(66) difficult tasks all had approximately 40% of replies in the 'absent' category.

### 3.7.4 RELIABILITY ANALYSIS

Reliability is the measure of the accuracy and stability of a scale. The measurement of internal consistency involves an estimation of the consistency or homogeneity of items selected to represent a particular construct. Statistically, reliability is the proportion of variability in item responses resulting from differences in respondents rather than error within the test. Cronbach's coefficient alpha (Cronbach, 1951) is the most commonly used summary statistic of internal reliability. However, there are problems associated with its use (Schmitt, 1996). First, alpha is related to both the strength of item correlation as well as the length of the test, and this has to be taken into account when judging the level of alpha. This is because with increasing numbers of items the reliability value will increase, even if the actual degree of correlation remains the same. Therefore, longer tests require a higher criterion. Secondly, alpha is not a measure of the homogeneity of items. For this a direct measure of item content saturation, the proportion of shared to total item variance, such as the mean inter-item correlation is often more useful. A further difficulty with alpha is that it does not indicate if a scale is unidimensional. If a test is multidimensional, computing an overall score will underestimate the true reliability of the individual components. Thus, it is more appropriate to use alpha to measure the reliabilities of separate sub-scales. Cortina (1993) has argues that an index of the spread of inter-item correlations should also be used to indicate the homogeneity of the scale.

The generally agreed lower limit for alpha is .70 (Nunnally, 1978), with alpha scores between .72 and .88 representing acceptable to high reliability (John & Benet-Martinez, 2000). Therefore, the initial level of the alpha coefficient of .963 for the full scale was

very good (table 3.4). However, as noted above, caution is required before accepting high alphas as generally a good thing, since they may simply reflect item redundancy. The danger is that by narrowing item content the internal consistency will increase but at the cost of reduced construct validity. However, examination of the inter correlation matrix did not reveal any items with very high intercorrelations (e.g. above 0.7). Only one pair of items, Q(39) disturbed feelings, and Q(64) quick emotional relief (.63), had an inter correlation above .60. The highest correlation on the fairness scale was between Q(73) disrespect and Q(30) appreciation (.55); On the discomfort scale Q(74), task interest and Q(68) in the mood (.63): On the achievement scale, Q(47) disorganisation and Q(12) unfinished work (.53); On the affiliation scale, Q(52) emotional deprivation and Q(31) emotional neglect (.54); And on the gratification scale, Q(66) difficult tasks and Q(54) effort (.43).

As regards the relationship of individual items with the full scale, corrected item-total correlations below .30 are generally considered too low (Nunnally, 1978). Examination of the full scale reliability table indicates two items, Q(1) upset others and Q(48) excitement with very low correlations . A more conservative criteria of .35 would also exclude Q(45) suppress feelings', Q (21) buzz, Q(11) waste time, and Q(3) boring tasks. Whilst the mean inter-item correlation was .26, and within the optimal range for item homogeneity of between .20 to .40, the relatively low figure suggests multidimensionality (Briggs & Cheek, 1986). This was supported by the wide spread of inter-item correlations between -.08 to .63.

Table 3.4 Full-scale reliability analysis and correlation with Rosenberg Self-esteem Scale

| Scale Item | Corrected Item-Total Correlation | Rosenberg Self-esteem |
|---|---|---|
| 1 Upset others | .29 | -.27*** |
| 2 Risk rejection | .42 | -.25*** |
| 3 Boring tasks | .35 | -.04 |
| 4 Diet control | .36 | -.16* |
| 5 Painful memories | .55 | -.26*** |
| 6 Powerless | .40 | -.23*** |
| 7 Sacrifices | .43 | -.09 |
| 8 Safe situation | .47 | -.34*** |
| 9 Doubts | .55 | -.21*** |
| 10 Past injustice | .53 | -.20** |
| 11 Waste time | .31 | -.00 |
| 12 Unfinished work | .35 | -.06 |
| 13 Disagreements | .40 | -.21** |
| 14 Continuing | .47 | -.30*** |
| 15 Loss | .56 | -.25*** |
| 16 Ignored | .43 | -.03 |
| 17 Restriction | .44 | -.11 |
| 18 Task hassle | .46 | -.21*** |
| 19 Support | .53 | -.30*** |
| 20 Unfair life | .60 | -.31*** |
| 21 Buzz | .34 | -.11 |
| 22 Hassle free | .61 | -.24*** |
| 23 Oppos. beliefs | .49 | -.07 |
| 24 Waiting | .53 | -.05 |
| 25 Craziness | .50 | -.23*** |
| 26 Understanding | .58 | -.12 |
| 27 Extra problems | .68 | -.24*** |
| 28 Relationship work | .49 | -.21*** |
| 29 Slipping back | .55 | -.16* |
| 31 Emotional neglect | .46 | -.19** |
| 32 Upsetting tasks | .65 | -.27*** |
| 33 Alone | .40 | -.24*** |
| 34 Relationship diff. | .54 | -.09 |
| 35 Oppositional acts | .52 | -.08 |
| 36 Comfortable | .55 | -.23*** |
| 37 Taking time | .42 | -.08 |
| 38 Self-discipline | .48 | -.20** |

Table 3.4 (continued) Full-scale reliability analysis and correlation with Rosenberg Self-esteem Scale

| Scale Item | Corrected Item-Total Correlation | Rosenberg Self-esteem | |
|---|---|---|---|
| 39 Disturbed feelings | .66 | -.32*** | |
| 40 Understood | .58 | -.18** | |
| 41 Emotional control | .56 | -.26*** | |
| 42 Confidence | .61 | -.21** | |
| 43 Noise | .39 | -.13* | |
| 44 Self-conscious | .45 | -.35*** | |
| 45 Suppress emotions | .33 | .11 | |
| 46 Easy solutions | .66 | -.24*** | |
| 47 Disorganisation | .50 | -.08 | |
| 48 Excitement | .24 | -.28*** | |
| 49 Time pressure | .60 | -.28*** | |
| 50 Interference | .62 | -.22*** | |
| 51 Self change | .42 | -.09 | |
| 52 Emo. deprivation | .58 | -.25*** | |
| 53 Let down | .62 | -.25*** | |
| 54 Effort | .53 | -.26*** | |
| 55 Task obstruction | .55 | -.13* | |
| 56 Personal flaws | .54 | -.51*** | |
| 57 Thoughts | .55 | -.45*** | |
| 58 Persistence | .54 | -.18** | |
| 59 Below par | .53 | -.19*** | |
| 60 Neglect others | .47 | -.23*** | |
| 61 Gratification delay | .58 | -.01 | |
| 62 Submission | .49 | -.08 | |
| 63 Disrupt routines | .58 | -.23*** | |
| 64 Emotional relief | .62 | -.30*** | |
| 65 Task perfection | .42 | -.13* | |
| 66 Difficult tasks | .48 | -.32*** | |
| 67 Relationship loss | .47 | -.17** | |
| 68 In mood | .53 | -.38*** | |
| 69 Trapped | .57 | -.33*** | |
| 70 Unfair change | .48 | -.11 | |
| 71 Morbid thoughts | .54 | -.27*** | |
| 72 Indulge | .39 | -.15* | |
| 73 Disrespect | .56 | -.13* | |
| 74 Task interest | .48 | -.21** | Alpha = .963 |

N = 232 ***p < .001, **p < .01, *p < .05

### 3.7.5 'MAP' ANALYSIS

A 'MAP' analysis, based on the 'Multi-trait Analysis Program' used by Hays et al. (1988) was conducted (table 3.5). Originally an SPSS (Windows) program, it has been adapted by other researchers as a general strategy to identify items that correlate higher on sub-scales other than their own predicted sub-scale (The WHOQOL group, 1998). Twenty-three items (31%) were loaded higher on other sub-scales rather than their own designated sub-scale. Furthermore, seven items had low corrected item-total correlations ($r < .4$) both with their own and with other sub-scales: Q(1) upset others, Q(3) boring tasks, Q(4) diet control, Q(33) alone, Q(43) noise Q(45) suppress feelings, and Q(48) excitement.

Table 3.5 'MAP' analysis of initial sub-grouping of items (correlations below 0.45 suppressed)

| | | Corrected item-total correlation | Sub-scale Correlation I | II | III | IV | V | VI |
|---|---|---|---|---|---|---|---|---|
| **(1) AFFILIATION** | | | | | | | | |
| Alpha = .815 | | | | | | | | |
| 1 | I absolutely must not risk upsetting other people<br>I can't bear to upset others | .324 | | | | | | |
| 2 | I absolutely must not risk being rejected<br>I can't bear to take such risks | .467 | | | | | | |
| 13 | I absolutely must not be involved in arguments and conflicts<br>I can't stand such disagreements | .401 | | | | | | |
| 15 | I absolutely must not suffer loss<br>It would be unbearable | .568 | | | .525 | | | .516 |
| 19 | I absolutely must not be deprived of the support I need<br>I can't go on without support | .523 | | | | | .500 | |
| 28 | I absolutely shouldn't have to work so hard at relationships<br>I can't stand it being so difficult | .458 | | | | | | |
| 31 | My parents absolutely shouldn't have neglected my emotional needs<br>It is an unbearable gap | .441 | | | | | | |
| 33 | I absolutely must not be alone<br>I can't stand being by myself | .371 | | | | | | |
| 34 | Those close to me absolutely must not be so difficult<br>I can't stand it when they are difficult | .489 | | .646 | | | | |
| 35 | Those close to me absolutely must not act against my wishes<br>I can't stand it if they do | .451 | | .675 | | | | |
| 52 | I absolutely must not be deprived <u>now</u> of the affection I needed in the past<br>I can't bear to be deprived further | .609 | | .508 | | | | .539 |
| 67 | Close relationships absolutely must not end<br>I couldn't bear to start again | .474 | | | | | | |

| (II) FAIRNESS<br>Alpha = .862 | Corrected item-total correlation | Sub-scale Correlation I | II | III | IV | V | VI |
|---|---|---|---|---|---|---|---|
| 10 I absolutely shouldn't have been treated so unfairly in the past I can't bear such injustice | .548 | | | | | | |
| 16 I absolutely must not be overlooked I couldn't stand such unfairness | .517 | | | | | | |
| 20 I absolutely don't deserve what has happened to me I can't stand life being so unfair | .519 | | | .563 | .410 | | .552 |
| 23 I absolutely must not be opposed when I know I'm right I can't stand that happening | .538 | | | | | | |
| 24 I absolutely must not be kept waiting I can't tolerate waiting | .419 | | | | | | |
| 30 I absolutely must not be taken for granted I can't stand being unappreciated | .645 | | | | | | |
| 40 Other people absolutely must understand me I can't bear it otherwise | .527 | .529 | | | | | .553 |
| 53 I absolutely must not be let down by other people I can't stand being let down | .604 | .568 | | .516 | | | .504 |
| 60 Those I care for absolutely shouldn't have been treated so badly I can't bear that it happened | .414 | | | | | | |
| 62 I absolutely must not give into other people's demands I can't stand having to do so | .524 | | | | | | |
| 70 I absolutely shouldn't have to change when others are at fault I can't tolerate doing so | .544 | | | | | | |
| 73 I absolutely must not be treated with disrespect I can't tolerate disrespect | .671 | | | | | .500 | |

| (III) COMFORT | Corrected item-total correlation | Sub-scale Correlation I | II | III | IV | V | VI |
|---|---|---|---|---|---|---|---|
| 5 I absolutely must not experience painful memories<br>I can't tolerate such pain | .510 | | | | | | .574 |
| 8 I absolutely must not go too far from where I feel safe<br>I can't stand feeling insecure | .497 | | | | | | |
| 18 I absolutely shouldn't have to do things right now<br>I can't stand the hassle | .508 | | | | | | |
| 22 I absolutely must be free of hassles<br>I can't stand even the slightest hassle | .663 | | | | | | .521 |
| 27 I absolutely must not experience extra problems<br>I couldn't stand any more problems | .707 | .613 | .509 | | | | .643 |
| 32 I absolutely must not do things that could be upsetting<br>I can't stand being upset | .686 | .598 | .502 | | | | .576 |
| 43 I absolutely must not be disturbed by noise<br>I can't stand such disturbance | .344 | | | | | | |
| 44 I absolutely must not be the centre of attention<br>I can't bear to feel self-conscious | .491 | | | | | | |
| 46 I absolutely must have an easier way around problems<br>I can't stand facing problems | .689 | .596 | .518 | | | .518 | .574 |
| 49 I absolutely must not have too many demands on my time<br>I can't stand the stress involved | .657 | | | | | | |
| 51 I absolutely must not change myself<br>I can't stand the discomfort of change | .439 | | | | | | |
| 58 I absolutely shouldn't have to persist at unpleasant tasks<br>I can't stand having to do so | .536 | | | | | .595 | |

| (III) COMFORT (continued)<br>Alpha = .893 | Corrected item-total correlation | Sub-scale Correlation I | II | III | IV | V | VI |
|---|---|---|---|---|---|---|---|
| 63 I absolutely must not have my familiar routines disrupted<br>I can't bear the disturbance | .568 | | | | .554 | | |
| 64 I absolutely must be free of distressing feelings as quickly as I can<br>I can't bear for them to continue | .644 | .550 | | | | | .653 |
| 71 I absolutely must not have morbid thoughts<br>I can't bear such thoughts | .560 | | | | | | .558 |

| (IV) ACHIEVEMENT<br>Alpha = .834 | Corrected item-total correlation | Sub-scale Correlation I | II | III | IV | V | VI |
|---|---|---|---|---|---|---|---|
| 11 I absolutely must not waste time<br>I can't bear to waste time | .440 | | | | | | |
| 12 I absolutely must not leave work unfinished<br>I can't bear to leave work unfinished | .547 | | | | | | |
| 37 I absolutely must not do things slowly<br>I can't stand taking my time | .455 | | | | | | |
| 38 I absolutely must not relax my self-discipline<br>I can't bear the slightest lapse | .620 | | | | | | |
| 47 I absolutely must not be disorganised<br>I can't bear disorganisation | .623 | | | | | | |
| 50 I absolutely must not have interference from other people<br>I can't bear such hassles | .530 | | .559 | .592 | | | .556 |
| 55 I absolutely must not be blocked in getting things done<br>I can't stand being obstructed | .543 | | .554 | | | | |
| 56 I absolutely must not have the personal flaws that I do<br>I can't tolerate such shortcomings | .446 | | | | | | .578 |
| 59 I absolutely must not feel below par (e. g. due to lack of sleep or illness)<br>I can't stand feeling below par | .486 | | | .515 | | | .506 |
| 65 If a job is worth doing, I absolutely must not fall short<br>I cannot accept lower standards | .563 | | | | | | |
| 68 I absolutely must be in the mood before I tackle something<br>Otherwise, I couldn't stand doing it | .334 | | | .540 | | .522 | |

| (V) GRATIFICATION<br>Alpha = .783 | Corrected item-total correlation | Sub-scale Correlation I | II | III | IV | V | VI |
|---|---|---|---|---|---|---|---|
| 3 I absolutely must not have boring tasks to do<br>I can't stand being bored | .365 | | | | | | |
| 7 I absolutely must not make sacrifices for the sake of the future<br>I can't stand losing out today | .430 | | | | | | |
| 21 I absolutely must have the buzz I need<br>I can't stand being deprived of this | .403 | | | | | | |
| 36 I absolutely must remain comfortable for as long as possible<br>I can't stand having to shift | .495 | | | .560 | | | |
| 45 I absolutely must not suppress my feelings<br>I can't stand bottling my feelings up | .349 | | | | | | |
| 48 I absolutely need excitement in my life<br>I couldn't stand a lack of excitement | .373 | | | | | | |
| 54 I absolutely shouldn't have to make so much effort<br>I can't stand having to push myself | .421 | | | .578 | | | |
| 61 I absolutely shouldn't have to delay getting what I want<br>I can't stand such delays | .528 | | .591 | | | | |
| 66 Tasks that I attempt absolutely must not be too difficult<br>Otherwise, I can't stand doing them | .415 | | | .558 | | | 543 |
| 72 I absolutely need to indulge myself<br>I can't stand being deprived of enjoyments | .527 | | | | | | .637 |
| 74 I absolutely must be interested in a task that I attempt<br>Otherwise, I can't stand doing it | .520 | | | | | | .631 |

| (VI) CONTROL /CERTAINTY<br>Alpha = .859 | Corrected item-total correlation | Sub-scale Correlation I | II | III | IV | V | VI |
|---|---|---|---|---|---|---|---|
| 4 I absolutely must not lose strict control of my diet<br>I can't stand the slightest lapse | .349 | | | | | | |
| 6 I absolutely must not be at the mercy of events<br>I can't stand being powerless to act | .418 | | | | | | |
| 9 I absolutely must be certain about decisions<br>I can't stand having doubts | .493 | | | | .508 | | |
| 14 My situation absolutely must not remain as it is<br>I can't stand for it to continue | .501 | | | | | | |
| 17 Other people absolutely must not restrict me<br>I can't stand it if I am restricted | .415 | | | | | | |
| 25 I absolutely must not experience mental difficulties<br>I can't stand to feel I'm losing my mind | .524 | | | | | | |
| 26 I absolutely must have an explanation<br>I can't stand being in the dark | .538 | | .597 | | | | |
| 29 I absolutely must not experience any signs of slipping back<br>I couldn't bear to have such feelings | .611 | .548 | | .499 | .516 | | |
| 39 I absolutely must not experience disturbing feelings<br>I can't bear such feelings | .675 | .621 | | .673 | | | |
| 41 I absolutely must not lose control over how I feel<br>I couldn't bear that to happen | .689 | | | .536 | | | |
| 42 I absolutely must be confident of success before I start<br>I can't stand uncertainty | .533 | .531 | .532 | | .563 | | |
| 57 I absolutely must not have certain thoughts<br>I can't bear such thoughts | .592 | .515 | | .560 | | | |
| 69 I absolutely must not feel trapped<br>I can't bear to feel trapped | .558 | | .505 | | | | |

### 3.7.6 INTERACTION WITH EGO-DISTURBANCE

An essential aspect of reliability is that items should be measuring the same concept and not another dissimilar concept. For frustration intolerance, the essential discrimination is with self-worth beliefs. It is prudent, therefore, to screen items for any that show a stronger relationship with issues of low self-esteem than with frustration intolerance. However, this is not straightforward since some items will overlap with both concepts. Therefore, a number of approaches were taken to explore this relationship. The simplest approach was to examine the intercorrelation between the Frustration-Discomfort items and the Rosenberg self-esteem scale. This was carried out following preliminary analysis of the self-esteem scale described in detail in chapter six. Comparison with the corrected item-total correlations shows that only three items did not have significantly higher correlations with the Frustration-Discomfort Scale compared to self-esteem (table 3.4). These were Q(1) upset others, Q(56) personal flaws and Q(57) thoughts. The overall correlation between the two scales was moderately significant ($r\ (232) = -.36$, $p < .001$).

A slightly different perspective comes from analysing the differences between the frustration and esteem statement scores for each item. Paired t-tests indicated that all but five items had significantly higher frustration scores, suggesting that overall statements predominately reflected frustration intolerance. The five items that had similar levels of scores on both scales were: Q(2) risk rejection, Q(16) ignored, Q(20) unfair life, Q(52) emotional deprivation, and Q(56) personal flaws. Lastly, a comparison was made between the percentage of responses that had higher esteem scores in relation to the total number of positive responses (minus the number of ties) for each item. Eight items had more than 40 % higher esteem scores: Q(2) risk rejection, Q(4) diet control, Q(16) unfair life, Q(52) emotional deprivation, Q(56) personal flaws, Q(67) relationship loss, and Q(73) disrespect.

### 3.7.7 COMPARISON OF CLINICAL AND STUDENT GROUPS

The selection of items for further analysis was not primarily based on a criterion approach, however it was important to have some indication of the ability of individual items to distinguish between clinical and non-clinical populations. Although, caution needs to be exercised in accepting students as representative of a non-clinical population, it is reasonable to assume this group would show lower overall Frustration-Discomfort scores. Therefore, independent t-tests were conducted between the two groups to compare item mean scores (table 3.6).

Table 3.6 Comparing Frustration-Discomfort item means scores between clinical and student group

| Scale item | | t | Mean Difference |
|---|---|---|---|
| 1 | Upset others | 0.09 | 0.00 |
| 2 | Risk rejection | 4.39*** | 0.61 |
| 3 | Boring tasks | 1.37 | -0.24 |
| 4 | Diet control | 1.52 | 0.24 |
| 5 | Painful memories | 4.39*** | 0.64 |
| 6 | Powerless | 1.26 | 0.19 |
| 7 | Sacrifices | 1.05 | 0.13 |
| 8 | Safe situation | 4.98*** | 0.81 |
| 9 | Doubts | 3.54*** | 0.49 |
| 10 | Past injustice | 3.09** | 0.50 |
| 11 | Waste time | 1.39 | 0.23 |
| 12 | Unfinished work | 2.60** | 0.36 |
| 13 | Disagreements | 3.72*** | 0.61 |
| 14 | Continuing situation | 13.20*** | 2.09 |
| 15 | Loss | 3.56*** | 0.58 |
| 16 | Ignored | 2.32* | -0.32 |
| 17 | Restriction | 0.10 | 0.00 |
| 18 | Task hassle | 0.80 | 0.13 |
| 19 | Support | 3.12** | 0.54 |
| 20 | Unfair life | 6.97*** | 1.13 |
| 21 | Buzz | 1.39 | -0.24 |
| 22 | Freedom from hassles | 5.80*** | 0.76 |
| 23 | Oppositional beliefs | 0.20 | 0.00 |
| 24 | Waiting | 0.56 | 0.00 |

Table 3.6 (Continued) Independent t-tests comparing Frustration-Discomfort item means between clinical and student groups

| Scale item | | t | Mean Difference |
|---|---|---|---|
| 25 | Craziness | 2.56* | 0.45 |
| 26 | Understanding | 2.79** | 0.42 |
| 27 | Extra problems | 6.29*** | 0.89 |
| 28 | Relationship work | 2.58** | 0.45 |
| 29 | Slipping back | 5.06*** | 0.86 |
| 30 | Appreciation | 0.64 | 0.00 |
| 31 | Emotional neglect | 5.81*** | 0.93 |
| 32 | Upsetting tasks | 3.43*** | 0.56 |
| 33 | Alone | 0.22 | 0.00 |
| 34 | Relationship difficulty | 3.23*** | 0.50 |
| 35 | Oppositional acts | 1.59 | 0.21 |
| 36 | Comfortable | 2.57** | 0.35 |
| 37 | taking time | 4.46*** | 0.65 |
| 38 | Self-discipline | 2.79** | 0.44 |
| 39 | Disturbed feelings | 5.90*** | 0.82 |
| 40 | Being understood | 2.32* | 0.35 |
| 41 | Emotional control | 5.15*** | 0.79 |
| 42 | Confidence | 3.40*** | 0.55 |
| 43 | Noise | 1.64 | 0.25 |
| 44 | Self-conscious | 3.49*** | 0.63 |
| 45 | Suppress emotions | 0.02 | 0.00 |
| 46 | Easy solution | 4.80*** | 0.77 |
| 47 | Disorganisation | 3.57*** | 0.60 |
| 48 | Excitement | 3.67*** | -0.59 |
| 49 | Time pressure | 4.23*** | 0.71 |
| 50 | Interference from others | 4.89*** | 0.78 |
| 51 | Self-change | 1.92 | 0.28 |
| 52 | Emotional deprivation | 5.80*** | 0.91 |
| 53 | Let down | 0.58 | 0.00 |
| 54 | Effort | 2.41* | 0.34 |
| 55 | Task obstruction | 0.51 | 0.00 |
| 56 | Personal flaws | 5.25*** | 0.84 |
| 57 | Thoughts | 5.56*** | 1.02 |
| 58 | Persistence | 0.68 | 0.00 |
| 59 | Below par | 4.08*** | 0.64 |
| 60 | Neglect others | 1.36 | 0.26 |
| 61 | Gratification delay | 1.90 | 0.28 |
| 62 | Submission | 0.73 | 0.12 |
| 63 | Disrupted routines | 4.24*** | 0.57 |

Table 3.6 (Continued) Independent t-tests comparing Frustration-Discomfort item means between clinical and student groups

| Scale item | | t | Mean Difference |
|---|---|---|---|
| 64 | Emotional relief | 7.23*** | 1.14 |
| 65 | Task perfection | 3.73*** | 0.56 |
| 66 | Difficult tasks | 5.13*** | 0.68 |
| 67 | Relationship loss | 3.26*** | 0.58 |
| 68 | In the mood | 2.13* | 0.32 |
| 69 | Trapped | 3.10** | 0.49 |
| 70 | Unfair change | 2.01* | 0.32 |
| 71 | Morbid thoughts | 6.18*** | 1.10 |
| 72 | Indulge | 1.34 | -0.21 |
| 73 | Disrespect | 0.08 | 0.00 |
| 74 | Task interest | 0.06 | 0.00 |

N = 242 (clinical) N = 87 (student) ***p < .001, **p < .01, *p < .05

## 3.8 ITEM SELECTION

The results of the preceding analyses were used to determine whether any items should be removed from the scale. Ten items were highlighted as being potentially inappropriate or problematic. Three items had poor frequency distributions and also exhibited very significantly skewed distributions: Q(4) diet control, Q(7) sacrifices, and Q(51) self-change. Two items exhibited very low full scale corrected item-total correlations: Q(1) upset others and Q(48) excitement. The mapping analysis indicated that Q(1) upset others, Q(3) boring tasks, Q(4) diet control, Q(33) alone, Q(45) suppress feelings, and Q(48) excitement had corrected item-total correlations below 0.4 with their own sub-scales.

Whilst selection of items was not based on criterion measures, it was notable that Q(48) excitement was the only item that was significantly higher in the non-clinical as compared to the clinical group. It may also be noted that all seven of the other items being considered for exclusion, other than Q(56) personal flaws, failed to differentiate

these two groups. Nevertheless, 'personal flaws' was the least satisfactory item in terms of overlap between self-esteem and frustration intolerance, appearing in all three analyses. In retrospect, it is apparent that intolerance of 'personal flaws' is conceptually much closer to self-worth than frustration intolerance.

Two items, Q(51) self-change, and Q(7) sacrifices, had moderately distorted distributions, but were not below the criterion Since, these two items are viewed as representing important aspects of low frustration tolerance in the literature they were included in further analyses. The other eight items, showing problems on a number of areas, were eliminated. These were Q(1) upset others, Q(3) boring tasks, Q(4) diet control, Q(33) alone, Q(43) noise, Q(45) suppress feelings, Q(48) excitement, and Q(56) personal flaws. Following the removal of each item with the lowest corrected item-total correlation or other problem a cyclical process of recalculating the internal consistency was carried out. The resulting 66 item scale had an alpha of .962, with all items above .3 on the full scale and, apart from Q(68) in the mood, all items above .4 on their designated sub-scales.

## 3.9 DISCUSSION

Preliminary analysis of the Frustration-Discomfort Scale indicated that several items required removal due to problems of reliability, frequency distribution, or conceptual overlap. Whilst personal flaws was moderately correlated with the scale, the results suggested that this item was conceptually better placed within the category of ego disturbance. The item most poorly related to other Frustration-Discomfort items was excitement. The reason for this is unclear since frustration intolerance has been conceptually associated with short-term hedonism and the need for excitement (e.g., Ellis, 1994.p 349) However, personality trait research does separate these two areas. Thus, the excitement facet in the NEO-Personality Inventory-Revised (Costa & McCrae, 1992) lies within the Extraversion domain whereas items involving impulse gratification are included in the Impulsiveness facet within the Neuroticism domain. Perhaps more

importantly, the Extraversion items in this inventory have a positive functional orientation whereas the Neuroticism items largely refer to emotional disturbance. Likewise, Eysenck and Eysenck (1991) have described two distinct Impulsivity components, Psychoticism and to a lesser extent Extraversion.

This raises also issues regarding functional and dysfunctional impulsive gratification, the former tending to be associated with higher levels of adventurousness and activity levels rather than emotional disturbance (Dickman, 1990). Thus, evidence suggests that Eysenck's Extraversion-Venturesomeness and Impulsiveness scales are related to higher alcohol use, but only Impulsiveness is related to alcohol problems (Nagoshi, Wilson, & Rodriguez, 1991). Similarly, a measure of irrational beliefs significantly predicted alcohol problems but not alcohol use (Camatta & Nagoshi, 1995). The irrational belief measure also had a positive association with impulsiveness but a negative association with Venturesomeness, although both were non-significant. This is consistent with the present finding of a lack of association between excitement and other frustration intolerance beliefs. It suggests the 'excitement' and 'buzz' items may be measuring functional extraversion rather than demands for immediate gratification and indulgence.

It did not prove feasible in practice to take into account the more subtle differences in item content by comparing self-esteem and frustration intolerance scores, and only the frustration intolerance item scores were employed. Nevertheless, statistical comparisons showed that statements predominately reflected frustration intolerance, and the results indicated that the psychometric characteristics of the scale were good. The distributions were normal, with individual items free of extreme frequency problems. Internal consistency, as measured by Cronbach's alpha, was high for both the full and hypothesised sub-scales. However, John and Benet-Martinez (2000) caution against the use of alpha without evidence regarding the multidimensionality of the scale, and certainly high alpha does not necessarily imply a unidimensional scale. Having said this, the 'MAP' analysis indicated that the proposed content categories were inadequate, particularly as regards control and gratification. This underlined the need for empirical

analysis to determine the underlying structure. The most powerful approach in this regard is confirmatory factor analysis, however this requires an established a-priori model. Since there is no existing model of the factor structure of frustration intolerance, the preliminary study used an exploratory factor analysis.

# CHAPTER FOUR

# FACTOR ANALYTIC STUDY

## 4.1 INTRODUCTION

Factor analysis is a statistical technique used to simplify a complex set of variables. It aims to discover which variables are correlated together so as to form factors. These factors are assumed to reflect the processes, or latent structure, underlying the relationship between variables. In terms of Messick's (1989) types of evidence for construct validity, this method investigates the structural validity of the scale. That is, whether this structure corresponds with hypothesised construct domains. Whilst theoretical categories have been suggested the factor structure of frustration intolerance has not been previously investigated. Therefore, an exploratory factor analysis was initially employed rather than confirmatory factor analysis, which is designed to test explicit factor structure.

## 4.2 PRELIMINARY ANALYSIS

As with other multivariate techniques, exploratory factor analysis is sensitive to distortion due to violation of statistical assumptions and poor data. Since factor analysis can produce superficially plausible results, even with the most distorted data, the potential for misleading conclusions is high. The data were therefore initially examined to determine its suitability for factor analysis.

### 4.2.1 SAMPLE SIZE AND COMPOSITION

The size of the sample used for the analysis after removal of outliers was 329. The sample size in factor analysis must be large enough to give stable correlation coefficients and, therefore, be replicable in other groups. In a small sample, the standard errors of the

correlations would be so large that the sample matrix would not resemble the 'true' population matrix. However, opinions are divided as to what size of sample is adequate. The ratio of sample size to the number of variables has been the traditional guideline, with recommendations ranging between 5:1 (Comrey & Lee, 1992) to 10:1 (Gorsuch, 1983). Recent studies indicate that so long as subjects exceed numbers of variables, this ratio is not as important as the absolute sample size and the size of the magnitude of the factor loadings (Guadagnoli & Velicer, 1988). Arrindel and Van der Ende (1985) have argued that the ratio of subjects to factors is most important, with this ratio needing to be in excess of 20:1. As a guide, Comrey and Lee (1992) suggest that a sample size of 200 is fair and 300 good. Tabachnick and Fidell (2000) also recommend as a general rule, at least 300 cases. With 66 remaining variables, the present sample fulfils the requirements for sample size, both in terms of variable and factor ratios, and for absolute sample size.

An essential test of the reliability of a scale and the selection of factors is whether the solution generalises to other populations. That is, will the same factors be found in different samples? Comrey and Lee (1992) emphasise that care must be taken when combining different groups for factor analysis, since the factor structure may be different. The student sample group would be expected to differ in some important respects from the patient group. However, for exploratory work it is more important to have a wide sample rather than a representative sample to ensure adequate variance. The student and clinical groups were therefore combined.

### 4.2.2 SCREENING FOR NORMALITY AND NON-LINEARITY

Multivariate statistics are based on the assumption of a linear model. However, departures from normality are less important in factor analysis and will only degrade the correlations. Linearity between pairs of variables is often assessed by the inspection of bivariate scatterplots. However, with 66 variables, inspection of all pairs would require a large number of individual comparisons for a complete assessment. Therefore, variables most likely to depart from linearity were screened, which indicated no obvious

distortions. Although a number of distributions were skewed, most were skewed in the same direction, therefore a reasonable degree of linearity was accepted.

### 5.2.3 FACTORABILITY OF THE CORRELATION MATRIX

Inspection of the correlation coefficients in the correlation matrix showed many correlations above .3, indicating that the data contained reliable factors. Bartlett's test of Sphericity was highly significant indicating the variables were significantly correlated and therefore suitable for factor analysis. To test the degree of intercorrelations among the variables the Kaiser-Maeyer-Olkin (KMO) was used. This measure of sampling adequacy needs to be above .6 to be acceptable, and at .92 was considered to be very good (Tabachnick & Fidell, 2000).

## 4.3 METHOD

### 4.3.1 ROTATION

A principal component analysis was used. This extraction method is the one of choice for condensing a large number of variables into a smaller group of components (Tabachnick & Fidell, 2000). Varimax rotation was initially used since this has advantages in the ease of factor solution interpretation. It gives clearer separation of factors since factor scores are unrelated (Kim & Mueller, 1978). However, this rotation assumes that factors are orthogonal, that is independent and not highly correlated. Theoretically, different aspects of frustration intolerance were likely to be related, suggesting that an oblique rotation might be more appropriate. However, with oblique rotation the factor axes are no longer constrained, therefore the interpretation is more complex, and communalities and proportions of explained variance cannot be calculated. Pedhazur and Schmelkin (1991) argue that the preferred course of action is to rotate both orthogonally and obliquely. The factor correlations from the oblique rotation can then be examined regarding the degree of association between the factors and thus the

appropriateness of each rotation. It is also often the case, when there is a good stable solution, that oblique and orthogonal solutions are almost identical (Kline, 1994). Thus, Tacq (1997) recommends that an orthogonal rotation is performed first and then comparison made with an oblique rotation.

### 4.3.2 FACTOR DETERMINATION

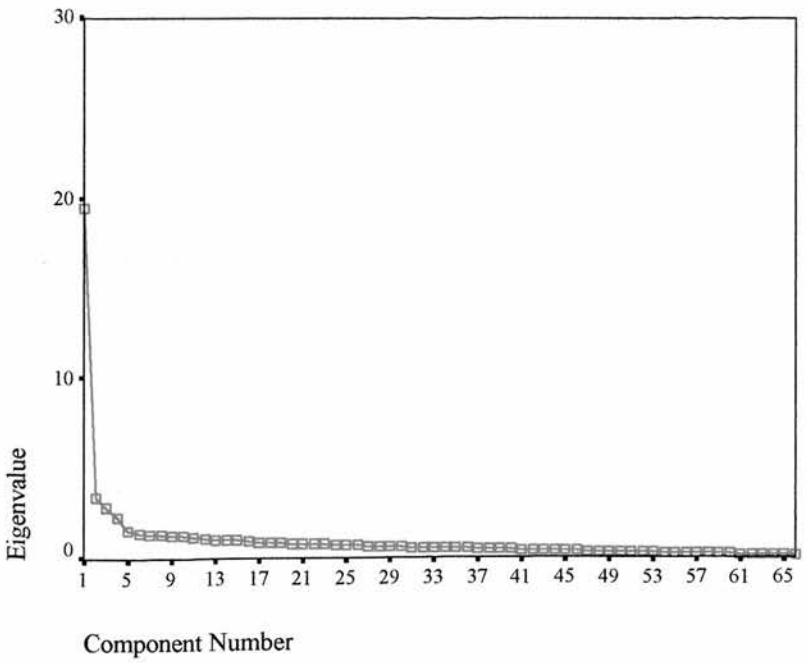
Most commentators on factor analysis agree that the most important decision to be made is determining the number of factors to extract. This has been likened by Comrey and Lee (1992) to trying to decide 'how short someone must be to be called short', since there is no practical method of arriving at a precise answer. However, as Comrey (1978) points out, rotating with either too few or two many factors can result in very misleading solutions even from the clearest data. With too many factors, the Varimax program will build minor, at the expense of major, factors. Thus, variables that load on major factors may be overlooked. Whereas with too few factors extracted, the variance from the excluded factors will be added to those remaining, distorting their appearance. On balance, Comrey suggests that it is best to extract too many factors rather than too few, since in the latter case not only will factors be lost but the remaining factors will be distorted by the inclusion of variance. He therefore recommends that a number of solutions with varying numbers of factors are examined and a decision made between these based on their meaningfulness.

There are a number of guidelines to help decide on the number of factors. A commonly used criterion, and the default method of the SPSS program, is that of Kaiser (1958). This retains only the components that have an Eigenvalue greater than 1. This is based on each standardised variable contributing a variance of 1, and therefore components with values below 1 will have less importance than individual variables and can be ignored. However, in large matrices (i.e. over 50 variables) this criterion will greatly overestimate the number of factors to be retained (Cattell, 1978), and may include those that have no practical importance. In the present analysis, seventeen variables had

Eigenvalues greater than 1, a total number of factors that would clearly be inappropriate. Examination of the Eigenvalues reveals that the first four factors all have values larger than two and that after the sixth factor changes in the remaining eigenvalues become relatively smaller. This would suggest a solution of between four and six factors.

A second criteria is the Scree test (Cattell, 1966). This recommends that all Eigenvalues before the one where the line decelerates most should be retained. On this basis, four factors appear to be indicated (figure 4.1). However, this method, whilst limiting the factors to those which account for fairly large and distinct amounts of variance, may risk rejecting factors that are of psychological importance even though they only account for small amounts of variance.

Figure 4.1 Scree plot



### 4.3.3 FACTOR LOADING CRITERIA

The Scree test indicated that four factors represented the best solution (figure 4.1). However, following Comrey's advice to err on the side of more rather than fewer factors, four, five and six factor solutions were computed. Following this, the rotated component matrix was examined to explore the variables loading on each factor.

Guadagnoli and Velicer (1988) recommend from the results of their study that factors with four or more loadings above .60 are reliable, regardless of the size of the sample. Also, that factors with ten or more low loadings (< .40) are reliable when the sample size is greater than 150. They further suggest that it may possible to tentatively interpret factors with a few low loadings if the sample size is over 300. However, it could be said that a factor so defined is very weak and close to being variable specific. How high a variable loading on a factor needs to be for it to be considered significant for description purposes cannot be answered precisely. However, factors with low loadings are particularly unstable across samples and for that reason usually rejected. A common cut-off point is usually .32 or larger, since this indicates that at least 10 % of the variance of that variable is associated with the particular factor. Comrey and Lee (1992) suggest, as a guideline, that loadings of above .71 can be rated as excellent (50% variance), .63 very good (40%), .55 good (30%), .45 fair (20%), and .32 as poor (10%). As a rule of thumb loadings greater than .5 can be considered to have practical significance (Hair et al., 1998). For the present analysis the criterion adopted was that variables loadings above .45 were used in the interpretation of the factors, and for inclusion in sub-scales.

In addition to the assessment of factor loadings, communalities for each variable were also examined. Communalities measure the amount of variance in individual variables that has been accounted for by a factor solution, that is the shared variance. Therefore, small values would suggest that a particular variable is a poorly accounted for by the factors, and adds little to the solution. A very high score (> .9), on the other hand, would suggest that much of the variance of an item had been accounted for by other variables

and was therefore redundant. However, since an ideal marker variable is one that loads highly on one factor but not others, this may result in a relatively low communality for such items, although it contains unique information. A criterion of .35 was used in the interpretation of factors.

The last, and perhaps the most important consideration, is the degree to which the extracted factors are theoretically meaningful and the component solution has psychological relevance. Thus, the point where factors can no longer be interpreted as coherent concepts suggests an endpoint. Note was also made of the proportion of pure and complex factor items. Pure factor items load only on one factor and not on others, and can be termed 'marker variables'. The need to overdetermine factors with good markers has been emphasised by Comrey and Lee (1992). They suggest that each factor should have ideally five, and at least three, markers to define a factor in the analysis. Complex variables, that is those variables having major loadings on more than one factor, are not useful in the definition of factors, but they are important for understanding the items themselves and their relationship to these factors. Using a criterion of a loading of 0.4 on more than one other factor, only three of the items in the sub-scales were classed as complex variables. Finally, Kim and Mueller (1978) suggest that, given the uncertainty of these individual criteria, a combination of methods should be used and the final judgement based on the interpretability of the solution in relation to current research. This was the approach taken in the present analysis.

## 4.4 RESULTS

### 4.4.1 FOUR-FACTOR SOLUTION

A four-factor solution produced strong factors that satisfied Guadagnoli and Velicer (1988) recommendations for stability and reliability. Examination of the Eigenvalues shows that after the first four factors there is a distinct gap and following successive values are small (table 4.1). In addition, most values in the residual correlation matrix

were close to zero. Both findings support the evidence for a four-factor solution (Tabachnick & Fidell, 2000). The extracted and rotated variance explained for the first sixteen factors is displayed in table 4.1. The four factors accounted for 42.6% of the variance (table 4.2): factor I (13.95%), factor II (11.35%), factor III (10.25%), and factor IV (7.02%).

Factor loadings are shown in table 4.3 with variables are ordered by size and loadings under 0.3 excluded to ease interpretation. Communalities are displayed in table 4.4. The component matrix is displayed in appendix 16. The factors were conceptually distinct, and the content of the items loading above .4 on each factor had a clear theoretical relationship to each other. Forty-nine of the sixty-six items loaded at .45 or higher on one of the factors. All variables had factor loadings above .30 with one or more factors. Eight variables failed to load substantially (> .40) on any factor: Q(60) other neglect, Q(13) disagreements, Q(69) trapped, Q(58) below par, Q(6) powerless, Q(42) confidence, Q(44) self-conscious, and Q(7) sacrifices. These items showed little conceptual coherence. Full loadings are shown in appendix 17.

Table 4.1 Eigenvalues for the first sixteen components, and extracted sums of squares for first six factors

| | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| Component | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 19.434 | 29.445 | 29.445 | 19.434 | 29.445 | 29.445 |
| 2 | 3.464 | 5.249 | 34.694 | 3.464 | 5.249 | 34.694 |
| 3 | 2.894 | 4.385 | 39.079 | 2.894 | 4.385 | 39.079 |
| 4 | 2.313 | 3.505 | 42.584 | 2.313 | 3.505 | 42.584 |
| 5 | 1.580 | 2.394 | 44.978 | 1.580 | 2.394 | 44.978 |
| 6 | 1.453 | 2.201 | 47.179 | 1.453 | 2.201 | 47.179 |
| 7 | 1.394 | 2.113 | 49.292 | | | |
| 8 | 1.378 | 2.088 | 51.380 | | | |
| 9 | 1.302 | 1.973 | 53.353 | | | |
| 10 | 1.238 | 1.876 | 55.229 | | | |
| 11 | 1.166 | 1.767 | 56.996 | | | |
| 12 | 1.112 | 1.685 | 58.681 | | | |
| 13 | 1.062 | 1.608 | 60.289 | | | |
| 14 | 1.046 | 1.585 | 61.875 | | | |
| 15 | 1.011 | 1.531 | 63.406 | | | |
| 16 | .928 | 1.406 | 64.812 | | | |

Table 4.2 Total variance explained: Four-factor solution

| | Rotation Sums of Squared Loadings | | |
|---|---|---|---|
| Component | Total | % of Variance | Cumulative % |
| 1 | 9.212 | 13.957 | 13.957 |
| 2 | 7.491 | 11.350 | 25.307 |
| 3 | 6.767 | 10.253 | 35.561 |
| 4 | 4.636 | 7.024 | 42.584 |

**Table 4.3 Four-factor item loadings[a]**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| quick emotional relief | .716 | | | |
| disturbed feelings | .709 | | | |
| thoughts | .680 | | | |
| continuing situation | .647 | | | |
| extra problems | .627 | | .379 | |
| slipping back | .599 | | | |
| morbid thoughts | .576 | | .333 | |
| unfair life | .569 | .321 | | |
| painful memories | .569 | | | |
| craziness | .562 | | | |
| emotional control | .547 | | | |
| emotional deprivation (now) | .544 | .376 | | |
| loss | .534 | | | |
| upsetting tasks | .522 | | .475 | |
| easy solutions | .516 | | .480 | |
| support | .487 | | | |
| emotional neglect (parents) | .444 | .310 | | |
| safe situation | .437 | | .361 | |
| relationship loss | .426 | | | |
| risk rejection | .405 | | | |
| neglect of others | .392 | .332 | | |
| disagreements | .391 | | .305 | |
| trapped | .389 | .359 | | |
| below par | .366 | | | .336 |
| powerless | .342 | | | |
| appreciation | | .663 | | |
| disrespect | | .654 | | |
| ignored | | .619 | | |
| oppositional acts | | .605 | | |
| oppositional beliefs | | .596 | | |
| gratification delay | | .532 | .335 | |
| unfair change | | .530 | .324 | |
| task obstruction | | .524 | | .461 |
| buzz | | .522 | | |
| understanding | .344 | .518 | | |
| restriction | | .515 | | |
| indulge | | .513 | .323 | |
| submission | | .509 | .332 | |
| let down | .345 | .499 | | |
| relationship difficulty | .322 | .483 | | |
| waiting | | .454 | .332 | .328 |
| being understood | .365 | .444 | | |
| relationship work | .406 | .433 | | |
| past injustice | .382 | .421 | | |
| confidence | | .377 | | .364 |
| difficult tasks | | | .680 | |
| persistence | | | .623 | |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

**Table 4.3 Four-factor item loadings[a]**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| time pressure | .340 | | .610 | |
| in the mood | | | .607 | |
| task interest | | | .594 | |
| effort | | | .567 | |
| self change | | | .548 | |
| task hassle | | | .543 | |
| freedom from hassles | .418 | | .539 | |
| disrupted routines | | | .515 | .390 |
| comfortable | .304 | | .501 | |
| interference from others | | .351 | .441 | .344 |
| self conscious | .351 | | .386 | |
| sacrifices | | .314 | .369 | |
| unfinished work | | | | .745 |
| disorganisation | | | | .710 |
| lapse of self-discipline | | | | .655 |
| waste time | | | | .649 |
| task perfectionism | | | | .587 |
| taking time | | | | .465 |
| doubts | .312 | | | .414 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 12 iterations.

**Table 4.4 Four-factor communalities**

| | Initial | Extraction |
|---|---|---|
| risk rejection | 1.000 | .224 |
| painful memories | 1.000 | .402 |
| powerless | 1.000 | .236 |
| sacrifices | 1.000 | .255 |
| safe situation | 1.000 | .339 |
| doubts | 1.000 | .390 |
| past injustice | 1.000 | .349 |
| waste time | 1.000 | .443 |
| unfinished work | 1.000 | .570 |
| disagreements | 1.000 | .288 |
| continuing situation | 1.000 | .445 |
| loss | 1.000 | .389 |
| ignored | 1.000 | .405 |
| restriction | 1.000 | .334 |
| task hassle | 1.000 | .412 |
| support | 1.000 | .350 |
| unfair life | 1.000 | .469 |
| buzz | 1.000 | .288 |
| freedom from hassles | 1.000 | .501 |
| oppositional beliefs | 1.000 | .429 |
| waiting | 1.000 | .430 |
| craziness | 1.000 | .385 |
| understanding | 1.000 | .446 |
| extra problems | 1.000 | .586 |
| relationship work | 1.000 | .359 |
| slipping back | 1.000 | .490 |
| appreciation | 1.000 | .514 |
| emotional neglect (parents) | 1.000 | .331 |
| upsetting tasks | 1.000 | .540 |
| relationship difficulty | 1.000 | .380 |
| oppositional acts | 1.000 | .450 |
| comfortable | 1.000 | .424 |
| taking time | 1.000 | .302 |
| lapse of self-discipline | 1.000 | .517 |
| disturbed feelings | 1.000 | .619 |
| being understood | 1.000 | .392 |
| emotional control | 1.000 | .429 |
| confidence | 1.000 | .425 |
| self conscious | 1.000 | .342 |
| easy solutions | 1.000 | .544 |
| disorganisation | 1.000 | .587 |
| time pressure | 1.000 | .536 |
| interference from others | 1.000 | .488 |
| self change | 1.000 | .350 |
| emotional deprivation (now) | 1.000 | .453 |
| let down | 1.000 | .442 |
| effort | 1.000 | .443 |
| task obstruction | 1.000 | .532 |

Extraction Method: Principal Component Analysis.

**Table 4.4 Four-factor communalities**

| | Initial | Extraction |
|---|---|---|
| thoughts | 1.000 | .515 |
| persistence | 1.000 | .500 |
| below par | 1.000 | .351 |
| neglect of others | 1.000 | .291 |
| gratification delay | 1.000 | .457 |
| submission | 1.000 | .411 |
| disrupted routines | 1.000 | .488 |
| quick emotional relief | 1.000 | .595 |
| task perfectionism | 1.000 | .416 |
| difficult tasks | 1.000 | .516 |
| relationship loss | 1.000 | .284 |
| in the mood | 1.000 | .461 |
| trapped | 1.000 | .362 |
| unfair change | 1.000 | .410 |
| morbid thoughts | 1.000 | .452 |
| indulge | 1.000 | .389 |
| disrespect | 1.000 | .521 |
| task interest | 1.000 | .436 |

Extraction Method: Principal Component Analysis.

### 4.4.2 FIVE AND SIX-FACTOR SOLUTIONS

The five-factor solution only accounted for a very small amount of additional cumulative variance (2.4%), with the fifth factor itself accounting for 2.7% after rotation (table 4.5). The fifth factor contained only one variable loading above 0.45, Q(25) craziness. The factor loadings are displayed in appendix 18.

Table 4.5 Total variance explained: Five-factor solution

| | Rotation Sums of Squared Loadings | | |
|---|---|---|---|
| Component | Total | % of Variance | Cumulative % |
| 1 | 9.076 | 13.751 | 13.751 |
| 2 | 7.506 | 11.373 | 25.125 |
| 3 | 6.652 | 10.079 | 35.204 |
| 4 | 4.676 | 7.085 | 42.289 |
| 5 | 1.775 | 2.689 | 44.978 |

Extraction of six factors also added only 3.7% overall cumulative variance (table 4.6), with the extra two factors accounting for 9.6% explained rotated variance. The factor loadings are displayed in appendix 19. The sixth factor in this solution is composed of only two items with substantial loadings, Q(13) disagreements, and Q(15) loss, with loss also loading on emotional discomfort. Clearly, if a factor has only one high loading variable it will be poorly defined. However, with two variables, the situation is more ambiguous and the reliability of the factor has to be judged from the relationship between them and with other variables (Tabachnick & Fidell, 2000). In this regard, Comrey (1978) notes that a common problem in factor analysis is the generation of low level factors due to the presence of two or more variables that are very similar to each other. He suggests that if a factor has only two variables then they should be clearly distinct in what they measure. Comrey suggests testing this by removing one from the analysis. With the removal of disagreements, the factor grouping disappears, suggesting that this factor may be item specific.

Table 4.6 Total variance explained: Six-factor solution

| | Rotation Sums of Squared Loadings | | |
|---|---|---|---|
| Component | Total | % of Variance | Cumulative % |
| 1 | 7.361 | 11.153 | 11.153 |
| 2 | 6.614 | 10.021 | 21.174 |
| 3 | 6.275 | 9.508 | 30.682 |
| 4 | 4.567 | 6.920 | 37.602 |
| 5 | 3.869 | 5.862 | 43.464 |
| 6 | 2.452 | 3.715 | 47.179 |

The fifth factor in the six-factor solution was composed of some of the items from the original affiliation sub-scale. However, only three items had substantial loadings: Q(31) emotional neglect, Q(52) emotional deprivation, and Q(67) relationship loss. However, it is noted that the communality values for relationship loss was still low (.360) as were those for the other two variables associated with this factor, Q(2) risk rejection (.293) and Q(19) support (.380). This indicates that these items had little of their variance accounted for by the solution. This suggests the factor is a reflection of the two emotional deprivation/neglect items, which have very similar content. As before, when 'emotional deprivation' was removed the factor disappeared and the resulting factors five and six had little psychological coherence, with only three substantial loadings. Additional extractions beyond six factors contained no variables with substantial loadings.

### 4.4.3. OBLIQUE ROTATION

It is unusual for psychological variables not to be associated to some extent, and there was good reason to believe that at least some of the facets of frustration-intolerance were likely to be correlated. Therefore, it was prudent to compare the previous results with an oblique rotation, which allows for correlated factors after rotation. This was carried out using the direct oblimin technique. The degree of obliqueness of the factors can be controlled by variations in the delta parameter. Harman (1976) recommends caution in

using the default delta value and suggests that several rotations be computed with the one closest to simple structure interpreted. In this present analysis, different values of delta made little difference to the overall factor structure, therefore zero was used to allow for a moderately correlated factor solution.

There is disagreement as to whether the structure matrix or the pattern matrix should be interpreted. Tabachnick and Fidell (2000) suggest the pattern matrix, since it is easier to see the variables that comprise the factor, and this is shown in table 4.7. Reassuringly, the results of the oblique rotation closely matched the orthogonal rotation: The same patterns of variables and factors were replicated and both the composition and the item order for each factor were very similar for both rotations. This evidence increased the confidence that the factor solution was reliable and robust. The attempt at an oblique rotation with five and six factors failed to converge after 50 iterations. This was taken as further evidence that a four-factor solution was a better fit to the data.

Examination of the component correlation matrix generated by the oblique rotation showed that the factor correlations ranged between .42 and .25 (table 4.8). Tabachnick and Fidell (2000) suggest that correlations above .32 indicate an oblique rotation is more appropriate. However, interpreting factor loadings in an oblique rotation is difficult. Therefore, given that the factor solutions in both rotations were almost identical, the orthogonal rotation was used for interpretation of variable loadings on individual factors.

Table 4.8 Component correlation matrix: Four-factor oblique rotation

| Component | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1 | 1.000 | .350 | .383 | .421 |
| 2 | .350 | 1.000 | .287 | .307 |
| 3 | .383 | .287 | 1.000 | .247 |
| 4 | .421 | .307 | .247 | 1.000 |

**Table 4.7 Oblique rotation of principal component analysis: Patttern matrix[a]**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| quick emotional relief | .750 | | | |
| thoughts | .721 | | | |
| disturbed feelings | .718 | | | |
| continuing situation | .700 | | | |
| extra problems | .604 | | | |
| slipping back | .602 | | | |
| craziness | .592 | | | |
| painful memories | .579 | | | |
| morbid thoughts | .579 | | | |
| unfair life | .576 | | | |
| emotional deprivation (now) | .557 | | | |
| loss | .531 | | | |
| emotional control | .526 | | | |
| support | .483 | | | |
| upsetting tasks | .469 | | | .386 |
| easy solutions | .461 | | | .391 |
| emotional neglect (parents) | .449 | | | |
| relationship loss | .431 | | | |
| safe situation | .409 | | | |
| risk rejection | .409 | | | |
| relationship work | .406 | .379 | | |
| neglect of others | .380 | | | |
| disagreements | .362 | | | |
| past injustice | .354 | .349 | | |
| trapped | .334 | | | |
| powerless | .319 | | | |
| appreciation | | .636 | | |
| ignored | | .625 | | |
| disrespect | | .621 | | |
| oppositional acts | | .571 | | |
| oppositional beliefs | | .569 | | |
| buzz | | .538 | | |
| indulge | | .515 | | .307 |
| unfair change | | .489 | | |
| restriction | | .487 | | |
| gratification delay | | .465 | | |
| submission | | .460 | | |
| task obstruction | | .453 | .452 | |
| understanding | | .447 | | |
| let down | | .417 | | |
| relationship difficulty | | .417 | | |
| waiting | | .376 | .305 | |
| being understood | .308 | .360 | | |
| unfinished work | | | .797 | |
| disorganisation | | | .734 | |
| waste time | | | .690 | |
| lapse of self-discipline | | | .668 | |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

**Table 4.7 Oblique rotation of principal component analysis: Patttern matrix[a]**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| task perfectionism | | | .602 | |
| taking time | | | .468 | |
| doubts | | | .385 | |
| confidence | | | .323 | |
| below par | | | | |
| difficult tasks | | | | .691 |
| persistence | | | | .621 |
| task interest | | | | .608 |
| in the mood | | | | .597 |
| time pressure | | | | .571 |
| self change | | | | .555 |
| effort | | | | .543 |
| task hassle | | | | .538 |
| freedom from hassles | .342 | | | .480 |
| disrupted routines | | | .368 | .474 |
| comfortable | | | | .459 |
| interference from others | | | .306 | .374 |
| sacrifices | | | | .350 |
| self conscious | | | | .334 |

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 18 iterations.

## 4.5 FACTOR INTERPRETATION AND DESCRIPTIONS

The factors with item loadings, commonalties and sub-scale corrected item correlations, are presented in a summary form in tables 4.9 to 4.12. The proposed factor labels are given in brackets. Items that were included in the final sub-scales are highlighted in bold type. There was four complex variables loading above .4 on other factors in addition to their own designated scale and these are marked *. Item Q(21) buzz was not included in the entitlement sub-scale although it had good factor loadings because of poor communalities and a relatively low corrected item-total correlation. Item Q(55) task obstruction had substantial loadings on both entitlement and achievement but was thought to be conceptually closer to the latter. Likewise, Q(46) easy solutions included in the comfort sub-scale rather than emotional discomfort. These two items are detailed on both factor lists for reference. Thus, all but two items appeared to conceptually fit with sub-scales, and there was little problem with interpretation due to conflicting items. Only four items were complex, that is having substantial loadings on more than one sub-scale. Comrey and Lee (1992) suggest that complex items are not necessarily problematic providing that there are sufficient 'marker' items with significant loadings on each sub-scale, which was the case in the present analysis.

Whilst selection of items was based on the criteria discussed above, rigidly applying these would have produced unequal sub-scales. Since it is useful for sub-scales to be of equal length, some degree of subjective choice was involved in selecting marginal items. This lead to the final sub-scales, comfort, emotional discomfort and entitlement having thirteen items each, and achievement eight items, making a full scale of 47 items.

### 4.5.1 FACTOR I (EMOTIONAL DISCOMFORT)

Table 4.9 Factor (I) loadings, communalities, and reliability

| Q | | F | h2 | Corrected item-total correlation |
|---|---|---|---|---|
| 64 | **Quick emotional relief** | .716 | .595 | .704 |
| 39 | **Disturbed feelings** | .709 | .619 | .735 |
| 57 | **Thoughts** | .680 | .515 | .640 |
| 14 | **Continuing situation** | .647 | .445 | .566 |
| 27 | **Extra problems** | .627 | .586 | .717 |
| 29 | **Slipping back** | .599 | .490 | .622 |
| 71 | **Morbid thoughts** | .576 | .452 | .605 |
| 20 | **Unfair life** | .569 | .469 | .609 |
| 5 | **Painful memories** | .569 | .402 | .586 |
| 25 | **Craziness** | .562 | .385 | .517 |
| 41 | **Emotional control** | .547 | .429 | .581 |
| 52 | **Emotional deprivation** | .544 | .453 | .595 |
| 15 | Loss | .534 | .389 | .588 |
| 32 | **Upsetting tasks** | .522 | .540*(III) | .666 |
| 46 | Easy solutions | .516 | .544*(III) | .664 |
| 19 | Support | .487 | .350 | .542 |
| 31 | Emotional neglect | .444 | .331 | .468 |
| 8 | Safe situation | .437 | .339 | .494 |
| 67 | Relationship loss | .426 | .284 | .473 |
| 2 | Risk rejection | .405 | .224 | .437 |
| 60 | Neglect of others | .392 | .291 | .447 |
| 13 | Disagreements | .391 | .288 | .434 |
| 69 | Trapped | .389 | .362 | .529 |
| 58 | Below Par | .366 | .351 | .440 |
| 6 | Powerless | .342 | .236 | .398 |

The theme running through this factor is the intolerance of emotional discomfort. High loading items involve not only beliefs about the unpleasantness of the experience, but also demands to be quickly free of such experience and avoid its return. They include intolerance of the sensations, thoughts, and situations associated with emotional distress and the belief these are unbearable. Dryden and Gordon (1993) describe these beliefs as one of the major forms of frustration intolerance. Whilst many of the items were initially

placed in a general 'comfort' category a separate sub-scale is clearly indicated. It is always possible with a factor that involves emotional distress that this merely reflects disturbance (Smith, 1982). However, care was taken to try to assess underlying beliefs with items that directly referred to symptoms or emotions being removed during scale development. Nevertheless, emotional intolerance and the degree of emotional distress clearly interact. Therefore, validation of this sub-scale will in particular require evidence that it can predict emotional disturbance independent of variance due to negative affect.

Several theorists place the role of avoidance and intolerance of anxiety as central to the maintenance of anxiety disorders (e.g. McNally & Lorenz, 1987; Goldstein & Chambless, 1989). Descriptions of avoidant personality disorder also highlight low tolerance for emotional distress and the pervasive use of avoidance to cope with strong feelings (Beck, Freeman, & Associates, 1990). Similarly, chronic depression has been associated with higher levels of avoidant coping (Krantz & Moos, 1988). Worry has also been proposed as functioning as a form of cognitive avoidance (Wells, 1994), and intolerance of uncertainty hypothesised as the central process in worry and generalised anxiety disorder (Dugas et al., 1998). Anxiety disorder models have also described the role of catastrophic interpretations of physiological sensations in the development of panic disorder (Clark, 1986). Similarly, Reiss and McNally (1985) propose an anxiety sensitivity trait that involves a fear that sensations of arousal may have harmful consequences.

REBT has long emphasised the importance of emotional intolerance particularly regarding secondary disturbance. The original description of frustration intolerance was in terms of discomfort anxiety, that is anxiety about anxious discomfort (Ellis, 1979b; 1980a). This was extended to incorporate discomfort depression, and other emotions (e.g. Dryden, 1987). Indeed, Warren and Zgourides (1991) note the similarity between the concept of anxiety sensitivity and that of discomfort anxiety and frustration intolerance (see also Ellis, 2002). However, an important difference between REBT and this model is that REBT distinguishes between 'catastrophising' and 'awfulising'. That

is, it is not the probability of unpleasant events occurring, or the degree of distress predicted, that is primarily related to increased emotional disturbance. Rather it is the 'irrational' belief that such events would be absolutely awful or intolerable (Ellis & Dryden, 1987). Warren et al. (1989) found that measures of both irrational beliefs and the probability of catastrophic thoughts significantly contributed unique variance in the prediction of avoidance in anxiety as well as in other problems. However, awareness of bodily sensations, by themselves, did not. This study used the Malouf and Schutte (1986) Belief scale, which is a single measure of irrational belief, thus preventing a more detailed analysis of specific belief processes.

To fully represent the concept of discomfort disturbance the emotional discomfort sub-scale would need to reflect intolerance of a range of affect, including depression and anxiety. Interestingly, recent studies using the anxiety sensitivity scale, showed that anxiety sensitivity was high both in depressed patients with no coexisting anxiety disorder, as in anxiety patients (Otto et al., 1995). Replicating these results, Taylor et al. (1996) found that only the 'fear of cognitive dyscontrol' factor correlated with depression when anxiety symptoms were partialled out. The two other factors forming anxiety sensitivity, fear of physical symptoms and fear of public embarrassment, were unrelated. They suggest that fear of mental incapacity may be the 'depression-specific' form of anxiety sensitivity. Furthermore, Cox, Enns, and Taylor (2001) found this factor was mediated by rumination over being depressed. However, other results suggest that anxiety sensitivity is specific to anxiety. For instance, Muris et al. (2001) found that controlling for trait anxiety the relationship between anxiety sensitivity and depression disappeared. On the other hand, there is evidence that anxiety sensitivity is significantly related to increased subjective distress with a cold pressor test (Schmidt & Cook, 1999), and higher reported levels of chronic pain (Schmidt & Telch, 1997).

### 4.5.2 FACTOR II (ENTITLEMENT)

Table 4.10 Factor (II) loadings, communalities, and reliability

| Q | | F | h2 | Corrected item-total correlation |
|---|---|---|---|---|
| 30 | **Appreciation** | .663 | .514 | .656 |
| 73 | **Disrespect** | .654 | .521 | .657 |
| 16 | **Ignored** | .619 | .405 | .533 |
| 35 | **Oppositional acts** | .605 | .450 | .626 |
| 23 | **Oppositional beliefs** | .596 | .429 | .585 |
| 61 | **Gratification delay** | .532 | .457 | .617 |
| 70 | **Unfair change** | .530 | .410 | .553 |
| 55 | Task obstruction | .524 | .532*(IV) | .604 |
| 21 | Buzz | .522 | .288 | .414 |
| 26 | **Understanding** | .518 | .446 | .601 |
| 17 | **Restriction** | .515 | .334 | .479 |
| 72 | **Indulge** | .513 | .389 | .453 |
| 62 | **Submission** | .509 | .411 | .561 |
| 53 | **Let down** | .499 | .442 | .599 |
| 34 | Relationship difficulty | .483 | .380 | .571 |
| 24 | **Waiting** | .454 | .430 | .558 |
| 40 | Being understood | .444 | .392 | .553 |
| 28 | Relationship work | .433 | .359 | .482 |
| 10 | Past injustice | .421 | .349 | .500 |
| 42 | Confidence | .377 | .425 | .548 |

Many of the beliefs in this factor concern relationships and this factor can be seen as representing an aspect of affiliation. However, unlike the equivalent demands for affiliation involved in ego-disturbance, these are not based on a need to protect and bolster self-worth. Thus, items reflecting possible relationship loss, such as Q(67) relationship loss, Q(19) support, and Q(2) risk rejection do not load on this factor. Rather they have significant loadings on emotional discomfort. Indeed, Q(1) upset others had an almost zero correlation with this factor (r = .09), suggesting that people scoring on high on this factor were less concerned with others distress and more concerned with their own desires. Therefore, these items seem to involve a demand that one should not

be frustrated or discomforted by other people, rather than intolerance of relationship distress per se. Many of the items are also from the initial fairness category, however entitlement includes a wider range of beliefs, with Q(61) gratification delay, Q(21) buzz, and Q(72) indulgence, all reflecting demands for gratification.

Therefore, the broader concept could be summarised by what Dryden and Gordon (1993) have described as 'I must get what I want'. That is, a sense of entitlement that one's desires must be meet and that other people should indulge and not frustrate these desires. Thus, it is not the desire for gratification, or even immediate gratification, that is dysfunctional but the sense of entitlement that desires must be indulged in spite of significant negative consequences. Thus, both fairness and gratification may be best conceived as facets of a broader entitlement factor. This factor clearly has parallels with the entitlement sub-scale on the DAS (Weissman & Beck, 1978). Burns (1980) describes this sub-scale as measuring the demand that a person's wants are met by others. He argues that these beliefs are also associated with a lack of personal effort since it follows that other people and the world should attend to these desires. He specifically associates this DAS sub-scale with low frustration tolerance and to problems with anger, resentment, and self-pity. Robb (1992) has also discussed the concept of 'rights', specifically in relation to assertiveness training, as tending to encourage demands for entitlement and anger.

Entitlement is closely associated with the concepts of justice, fairness, deservedness, and rights. There has been much philosophical debate as to the nature and definition of these concepts, which are often used interchangeably (see Pojman & McLeod, 1998). For example, Kleinig (1971) distinguishes between different types of deservedness. Raw Deserts are not dependent on a system of rules (e.g. 'John deserves some good luck'), whereas Institutional Deserts are derived from quasi-legal rules ('John deserves promotion for his hard work'). In the latter, people are seen as responsible for following certain rules regarding the treatment of others. Research on entitlement has largely focused on what constitutes just rules and conduct, and various models have attempted

to describe the rules by which individuals perceive outcomes as being fair (e.g. Adams, 1965; Tyler, 1994), or to which they are entitled (Tyler & Lind, 1992). Certainly, evidence shows that it is the perception of injustice rather than objective measures of deprivation that is important for an individual in judging contentment (Martin, 1986). In particular, perception of fairness is based on what an individual believes they are entitled to receive. Thus, entitlement regarding consideration from others appears to involve two general issues: respect and explanation (Skarlicki & Folger, 1997). Miller (2001) suggests that disrespect is perceived as unfair because it deprives the person of something they are entitled to, or subjects them to something they do not think they deserve. Whilst social psychological research has discussed the link between anger and injustice the distinction between constructive and destructive reactions has often not been recognised. More specifically, there has been no clear distinction made between inferences, that is the rules by which fairness is judged, and the absoluteness and flexibility with which people adhere to these rules. Thus, Major (1994) suggests that individuals will believe their entitlements have been violated if there is perceived illegitimate injustice relative to other people. Likewise, Mikula (1993) in attempting to classify everyday conceptions of injustice suggests that the inference that others *chose* to act unjustly is an important element in perceived injustice.

However, REBT argues that it is not the desire for justice, or the perception that rules of justice have been violated, that leads to emotional disturbance, but rather the demand that justice absolutely must exist. It is the absoluteness of such rules that is irrational and which leads to unhealthy negative emotions. The frustrated desire for justice, by itself, will not lead to emotional disturbance but rather to healthy negative emotion, such as disappointment. There is also an interaction between inferences and absolute rules, and for instance, there is evidence that anger prone individuals are more likely to infer disrespect (Graham & Hudley, 1994). However, REBT would suggest this increased sensitivity to injustice derives from a stronger sense of entitlement, rather than the other way around. There has been little attempt to define the psychological concept of entitlement in the social psychological literature, on this basis it is best used to describe

an absolute requirement for justice, rather than the rules for justice per se. Similar to REBT theory, Major (1994) has suggested that what distinguishes entitlement from 'related concepts like wants and expectations' is a sense of 'moral imperative', that is an expectation that 'one should or ought to receive something' (Singer, 1981).

The interaction of entitlement with self-esteem is also important for the present study. Crocker and Major (1989) have proposed that perceived injustice in disadvantaged groups can be a means of protecting self-esteem, since failures can be attributed to prejudice. However, they review evidence showing that, contrary to theories of self-esteem, disadvantaged groups do not actually have lower self-worth. Alternatively, Bushman and Baumeister (1998) have argued that anger, rather than being associated with a defence against low self-esteem, is associated with a grandiose view of the self. However, there is a question as to whether such grandiosity is best categorised as a form of ego-disturbance. Certainly, the concept of entitlement is associated with notions of self-centredness, self-righteousness, that ones own desires should have higher priority and that one should 'get ones own way'. Indeed, from an analysis of different sub-types of narcissism, DiGiuseppe et al. (1995) concluded that entitlement and grandiosity were central to this disorder rather than emotional vulnerability and low self-worth. However, whether entitlement beliefs are associated with high self-esteem is a question that can only be answered empircally.

### 4.5.3 FACTOR III (COMFORT)

Table 4.11 Factor (III) loadings, communalities, and reliability

| Q | | F | h2 | Corrected item-total Correlation |
|---|---|---|---|---|
| 66 | **Difficult tasks** | .680 | .516 | .614 |
| 58 | **Persistence** | .623 | .500 | .624 |
| 49 | **Time pressure** | .610 | .536 | .684 |
| 68 | **In the mood** | .607 | .461 | .599 |
| 74 | **Task interest** | .594 | .436 | .547 |
| 54 | **Effort** | .567 | .443 | .621 |
| 51 | **Self change** | .548 | .350 | .502 |
| 18 | **Task hassle** | .543 | .412 | .547 |
| 22 | **Freedom from hassles** | .539 | .501*(I) | .648 |
| 63 | **Disrupted routines** | .515 | .488 | .582 |
| 36 | **Comfortable** | .501 | .424 | .579 |
| 46 | **Easy solutions** | .480 | .544*(I) | .646 |
| 32 | Upsetting tasks | .475 | .540*(I) | .625 |
| 50 | **Interference from others** | .441 | .488 | .589 |
| 44 | Self-conscious | .386 | .342 | .457 |
| 7 | Sacrifices | .369 | .255 | .390 |

The items loading on this factor refer to the demand that life should be easy, comfortable, and free of hassles, effort, and inconvenience. These beliefs, described by Dryden and Gordon (1993) as a major form of low frustration tolerance, are central to its definition. Whilst the importance of emotional regulation and avoidance in psychological problems has been recognised the pursuit of comfort has received much less attention. In contrast to the more dramatic manifestations of emotional intolerance, comfort beliefs may have subtle but wider effects, making them more destructive in the long term.

Commitment to a range of meaningful goals is important for personal fulfilment and emotional resilience (Power & Dalgleish, 1997; Emmons, 1996). Yet, intolerance of the inevitable discomforts involved in pursuing and switching goals has been implicated in reduced life satisfaction. Thus, DiGiuseppe (1991a) suggests that comfort beliefs

undermine satisfaction in life by reducing the commitment to long term goals that require persistence and effort. He suggests that patients often leave therapy when they have achieved symptom removal, when they feel better, but without making long-term changes in their general life. These wider changes require continued effort and persistence and are, therefore, likely to be avoided by patients with high demands for comfort. He argues that these beliefs, and their failure to change, are significant causes of relapse since the situational triggers remain intact. Ellis (1985a) has also argued that these beliefs often contribute to the maintenance of psychological problems, by reducing the motivation for change within therapy. They impair engagement in the therapy process, increase treatment failure, and encourage patients to pursue ineffective, but more comfortable, types of therapy (Ellis, 1983).

The specific relationship of comfort beliefs with primary problems is unclear, since these beliefs have previously been assessed in combination with other types of frustration intolerance. However, the content of these items with their focus on lack of persistence, task avoidance, and freedom from hassle suggests that they will be prominent in failures of self-control. Thus, binge comfort eating, impulsive buying, and procrastination would be expected to have significant associations with comfort beliefs. However, self-control is clearly a complex process and breakdown in this process presumably can occur for different reasons and at different points. Several theories have been proposed to account for self-control failures, including threatened self-esteem (Heatherton & Baumeister, 1991), regulation of negative affect (Baumeister & Scher, 1988) and toleration of frustration (Mischel, 1996). However, as behaviourists as well as REBT have noted, the desire to take the quick, easy and immediate option is a 'normal' aspect of human and animal behaviour. The decision to override this temptation and tolerate the loss of comfort is a central component of self-control strategies.

### 4.5.4 FACTOR IV (ACHIEVEMENT)

Table 4.12 Factor (IV) loadings, communalities, and reliability

| Q | | F | h2 | Corrected item-total correlation |
|---|---|---|---|---|
| 12 | **Unfinished work** | .745 | .570 | .627 |
| 47 | **Disorganisation** | .710 | .587 | .656 |
| 38 | **Lapse of self-discipline** | .655 | .517 | .601 |
| 11 | **Waste time** | .649 | .443 | .509 |
| 65 | **Task perfectionism** | .587 | .416 | .518 |
| 55 | **Task obstruction** | .461 | .532*(II) | .505 |
| 37 | **Taking time** | .465 | .302 | .453 |
| 9 | **Doubts** | .414 | .390 | .455 |

Since irrational dysfunctional beliefs are characterised as absolutistic, unrealistic, and rigid, perfectionistic achievement goals are often been seen as exemplifying these aspects (Ellis, 2002). However, as was discussed in chapter two, existing Multidimensional Perfectionism Scales (Frost et al., 1990; Hewitt and Flett, 1989) show inconsistent relationships with emotional disturbance. It was suggested that an explanation for this was, firstly, a lack of clear differentiation between demands and preferences in regard to item wording. Secondly, that the scales did not clearly distinguish between perfectionism related to self-evaluation compared to frustration intolerance. The items on the present sub-scale specifically attempt to assess intolerance in the achievement domain, as opposed to lowered self-esteem. This appears to have been successful, in that the achievement sub-scale and the Rosenberg Self-esteem Scale are only very weakly correlated ($r\ (232) = -.18$), although the degree to which the scale measures frustration intolerance remains to be explored in the validation studies.

Certainly, there is evidence from other areas that the intolerance of goal frustration can be dysfunctional, and that this is separate from self-esteem difficulties. Thus, the original defining characteristic of the Type-A behaviour pattern was that of excessive achievement striving, and inflexible standards for performance (Friedman & Rosenman,

1974). Further research indicated that the behavioural component most discriminative of heart disease cases was the 'relatively stable tendency to react to a broad range of frustrating-inducing events with responses indicative of, anger, irritation... and to actually express antagonism, criticalness, uncooperativeness...' (Dembrowski & Czajowski, 1989). A recent study that factor analysed Type-A reactions, based on responses to frustrating-inducing scenarios, yielded two factors (Birks & Roger, 2000). Interestingly, both factors involved striving for achievement but the 'toxic' dysfunctional factor was characterised by impatience, anger, and the 'need to win at all costs'. These descriptions are more typical of frustration intolerance than fragile self-esteem, more often associated with the opposite characteristics of low confidence, unassertiveness, and withdrawal. However, some theorists have proposed that type-A behaviour is driven by threats to self-worth contingent on high standards (Martin, Kuiper & Westra, 1989). Unfortunately, the contribution of these two categories of belief has not been directly investigated. However, it is interesting that Flett, Hewitt, Blankstein, and Dynin (1994) found that self-orientated perfectionism was highly correlated with a measure of type-A achievement striving, but that impatience was related to both self and socially prescribed perfectionism. This suggests that high achievement demand beliefs are associated with some dysfunctional behaviour. However, whether these beliefs continue to exert an influence independent of self-esteem requires empirical investigation. Certainly, comparisons between the Multi-dimensional Perfectionism Scale (Hewitt and Flett, 1989) and the Jones Irrational Beliefs test found that self-orientated perfectionism was most strongly correlated with low frustration tolerance (Flett, Hewitt, Blankstein, & Koledin, 1991). A follow-up study using the Survey of Personal Beliefs showed that self-worth was least correlated with self-orientated perfectionism ($r = .06$) and most correlated with socially-orientated perfectionism ($r = .29$).

## 4.6 RELIABILITY ANALYSIS

The corrected item-total correlation was computed for the items on the revised sub-scales selected from the exploratory factor analysis (tables 4.13 to 4.16). No items fell below .4 on their own sub-scale. The coefficient alpha is also given for each sub-scale, ranging from .907 to .820. The generally agreed lower limit for alpha is .7, and an alpha exceeding .8 is generally considered satisfactory for research (Nunnally, 1978). Therefore, the alpha for the first three sub-scales indicates very good reliability. Factor IV (achievement) does have a lower, although still good, level of alpha primarily due to its shorter length. The coefficient alpha for the full scale was .951 (table 4.17). The mean inter-item correlation for each sub-scale is also shown, and these are within the optimal range of item homogeneity of between .2 to .4 that Briggs and Check (1986) suggest indicate the best balance between bandwidth and fidelity. That is, between the breadth of the content being sampled and measurement precision (Cronbach & Gleser, 1957). The wider range of correlations shown in the full scale, and its lower mean inter-item correlation support the argument for frustration intolerance being composed of a number of facets.

Table 4.13 Reliability analysis: Emotional discomfort sub-scale (I)

| Scale item | | Corrected Item- Total Correlation |
|---|---|---|
| 64 | Emo. relief | .74 |
| 39 | Disturbed feelings | .75 |
| 57 | Thoughts | .65 |
| 14 | Continuing | .58 |
| 27 | Extra problems | .70 |
| 29 | Slipping back | .59 |
| 71 | Morbid thoughts | .63 |
| 20 | Unfair life | .60 |
| 5 | Painful memories | .59 |
| 25 | Craziness | .54 |
| 41 | Emo. control | .60 |
| 52 | Emo deprivation | .52 |
| 32 | Upsetting tasks | .64 |

Alpha = .907
Mean inter-item correlation = .433; Inter-item correlation range = .275 to .630

Table 4.14 Reliability analysis: Entitlement sub-scale (II)

| Scale item | | Corrected Item-Total Correlation |
|---|---|---|
| 73 | Disrespect | .66 |
| 16 | Ignored | .52 |
| 30 | Appreciation | .66 |
| 35 | Opp. acts | .60 |
| 23 | Opp. beliefs | .61 |
| 61 | Grat. delay | .61 |
| 70 | Unfair change | .58 |
| 26 | Understanding | .57 |
| 72 | Indulge | .58 |
| 62 | Submission | .55 |
| 17 | Restriction | .46 |
| 53 | Let down | .55 |
| 24 | Waiting | .56 |

Alpha = .883
Mean inter-item correlation = .368; Inter-item correlation range = .193 to .543

Table 4.15 Reliability analysis: Comfort sub-scale (III)

| Scale item | | Corrected Item-Total Correlation |
|---|---|---|
| 66 | Difficult tasks | .62 |
| 58 | Persistence | .62 |
| 49 | Time pressure | .67 |
| 68 | In mood | .60 |
| 74 | Task interest | .55 |
| 54 | Effort | .63 |
| 51 | Self change | .50 |
| 18 | Task hassle | .55 |
| 22 | Hassle free | .64 |
| 63 | Disrupt routines | .57 |
| 36 | Comfortable | .57 |
| 46 | Easy solutions | .62 |
| 50 | Interference | .59 |

Alpha = .896
Mean inter-item correlation = .397; Inter-item correlation range = .262 to .629

Table 4.16 Reliability analysis: Achievement sub-scale (IV)

| Scale item | | Corrected Item-Total Correlation |
|---|---|---|
| 12 | Unfinished work | .63 |
| 47 | Disorganisation | .64 |
| 38 | Self-discipline | .60 |
| 11 | Waste time | .51 |
| 65 | Task perfection | .52 |
| 55 | Task obstruction | .51 |
| 37 | Taking time | .45 |
| 9 | Doubts | .46 |

Alpha = .821
Mean inter-item correlation = .363
Inter-item correlation range = .228 to .534

Table 4.17 Reliability analysis: Full scale

| Scale Item | | Corrected Item-Total Correlation |
|---|---|---|
| 5 | Painful memories | .54 |
| 9 | Doubts | .55 |
| 11 | Waste time | .30 |
| 12 | Unfinished work | .35 |
| 14 | Continuing | .46 |
| 16 | Ignored | .41 |
| 17 | Restriction | .42 |
| 18 | Task hassle | .47 |
| 20 | Unfair life | .59 |
| 22 | Hassle free | .62 |
| 23 | Opp. beliefs | .50 |
| 24 | Waiting | .54 |
| 25 | Craziness | .48 |
| 26 | Understanding | .57 |
| 27 | Extra problems | .68 |
| 29 | Slipping back | .56 |
| 30 | Appreciation | .54 |
| 32 | Upsetting tasks | .66 |
| 35 | Opp. acts | .53 |
| 36 | Comfortable | .56 |
| 37 | Taking time | .43 |
| 38 | Self-discipline | .48 |
| 39 | Disturbed feelings | .66 |
| 41 | Emo. control | .56 |
| 46 | Easy solutions | .66 |
| 47 | Disorganisation | .50 |
| 49 | Time pressure | .62 |
| 50 | Interference | .64 |
| 51 | Self change | .44 |
| 52 | Emo deprivation | .54 |
| 53 | Let down | .59 |
| 54 | Effort | .54 |
| 55 | Task obstruction | .55 |
| 57 | Thoughts | .53 |
| 58 | Persistence | .55 |
| 61 | Grat. delay | .59 |
| 62 | Submission | .50 |
| 63 | Disrupt routines | .59 |
| 64 | Emo. relief | .61 |
| 65 | Task perfection | .42 |
| 66 | difficult tasks | .49 |
| 68 | In mood | .53 |
| 70 | Unfair change | .51 |
| 71 | Morbid thoughts | .55 |
| 72 | Indulge | .38 |
| 73 | Disrespect | .55 |
| 74 | Task interest | .48 |

Alpha = .951
Mean inter-item correlation = .292
Inter-item correlation range = -.019 to .630

## 4.7 DESCRIPTIVE STATISTICS

Means and standard deviations for the two groups are presented in table 4.18, and the distributions displayed in figures 4.2 to 4.4. For both the student and patient groups, the Kolmogorov-Smirnov tests for the total Frustration-Discomfort scores were non-significant indicating normal distributions. The skewness (Z = -.04) and kurtosis (Z = 1.66) statistics for the patient group were also within the normal range. Similarly, for the student group both skewness (Z = .67) and kurtosis (Z = -.83) were also normal. The Kolmogorov-Smirnov tests were all non-significant for each of the sub-scales, indicated that in a non-clinical group the distribution is normally distributed. There was evidence of negative kurtosis (Z = -2.27) for emotional discomfort and achievement (Z = -2.46) in the patient group. However, this was slight given the size of the sample, and the shape of the distribution appeared satisfactory. Although non-normal kurtosis produces underestimates of variance, these underestimates disappear with samples of more than 100 (Tabachnick & Fidell, 2000). The skewness statistics for all patient sub-groups was within acceptable limits. Overall therefore, the distributions were good and no transformations were necessary.

Table 4.18 Frustration-Discomfort Scale: Descriptive statistics

| | Mean | SD |
|---|---|---|
| Combined | 89.18 | 34.16 |
| Clinical | 95.16 | 34.53 |
| Student | 72.63 | 27.08 |

There was no significant association between the full scale and age (r (240) = -.02, ns) or gender (t (240) = .62, ns). Similarly, there was no significant relationship between these variables and individual sub-scales. This is contrary to the results of Kassinove and Eckhardt (1993) who, using the Survey of personal Beliefs, found significant gender differences on the Awfulising and the Low Frustration tolerance scales, with males had

better frustration tolerance than females. However, previous research using the Jones Irrational Beliefs Test had indicated no gender differences (Zurawski & Smith, 1987; Zwemer & Deffenbacher, 1984).

Figure 4.2 Distribution Frustration-Discomfort Scale: Combined group

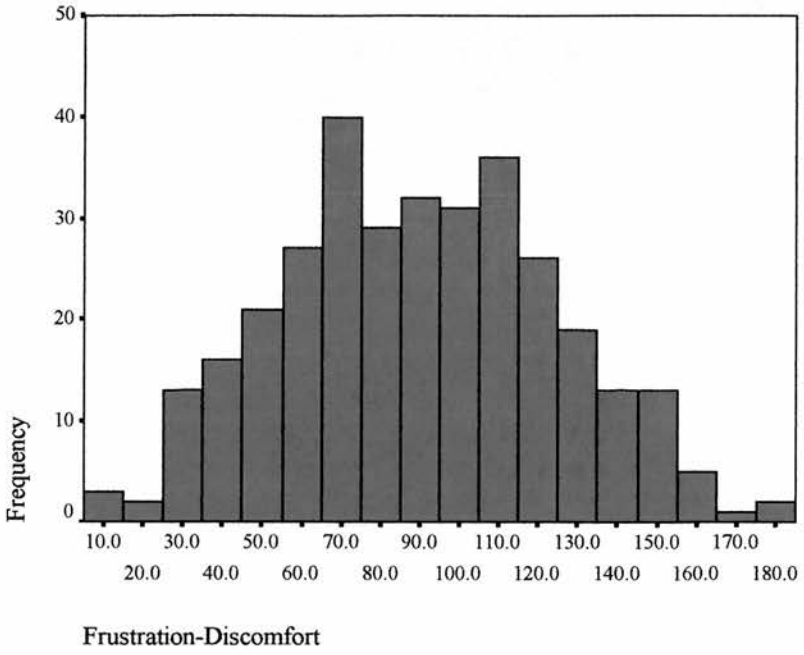


Figure 4.3 Distribution Frustration-Discomfort Scale: Patient sample

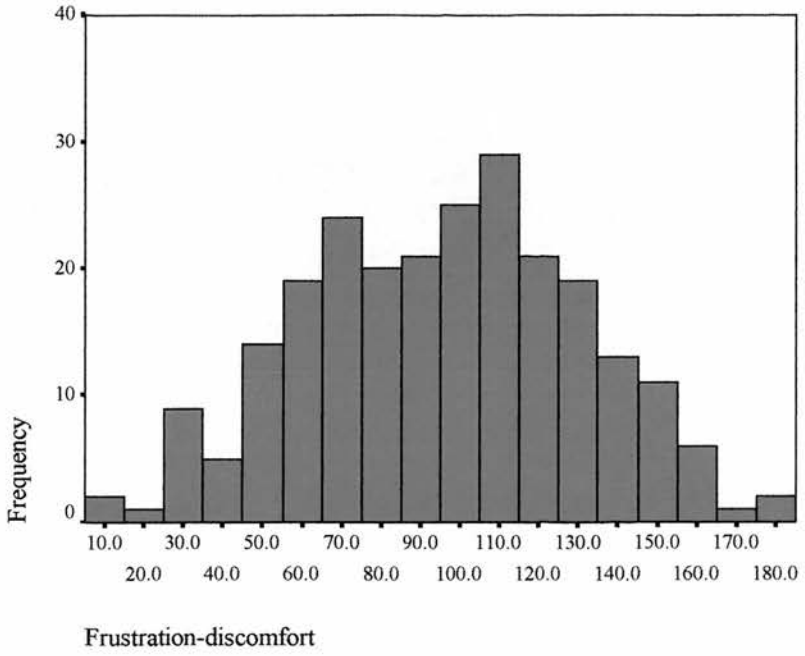
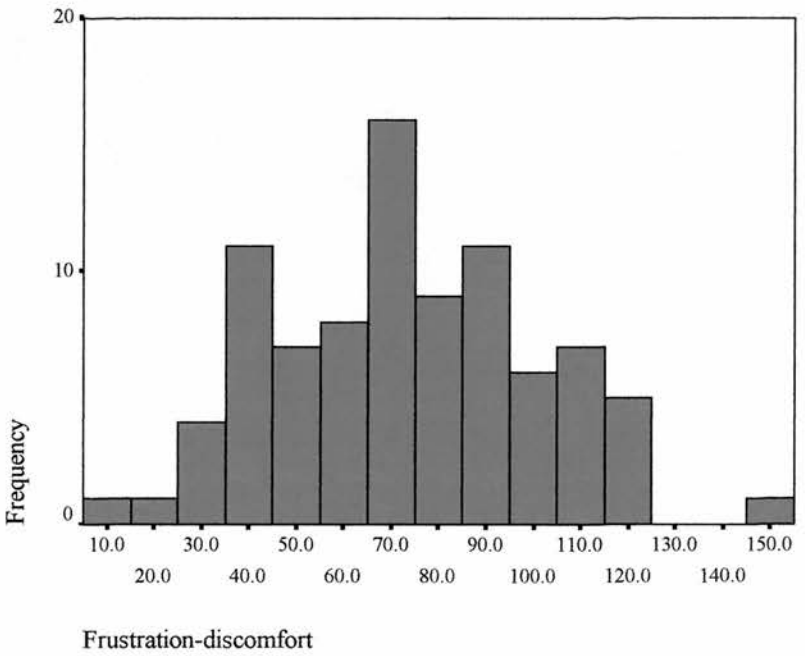



Figure 4.4 Distribution Frustration-Discomfort Scale: Student sample



## 4.8 SUB-SCALE INTERCORRELATIONS

An unweighted sum score, using the selected items for each sub-scale, was computed. When using principal component analysis this simple method is often adequate, and no major discrepancies occur in validity. Schmitt (1996) suggests that, as a minimum, a matrix that includes sub-scale reliabilities, intercorrelations between sub-scales, and the intercorrelations corrected for attenuation due to unreliability, should be presented for multidimensional tests (table 4.19). Since corrected intercorrelations removes differences due to differential reliability, it makes it easier to compare and identify sub-scale pairs that lack discrimination and are highly correlated (John & Benet-Martinez, 2000). Uncorrected intercorrelations enable the size of alpha to be evaluated relative to the overlap between scales. The reliabilities scores should be substantially larger than these uncorrected intercorrelations, which is the case in the present scale. All sub-scales were moderately intercorrelated, with emotional discomfort most strongly correlated with comfort, achievement with self-entitlement, and entitlement with comfort. This suggests that the use of the total score, as an indication of overall frustration intolerance may be appropriate. The comfort and discomfort factors have the strongest intercorrelation. To some extent this may be due to ambiguous item wording, for example 'I can't stand facing problems', could refer to facing either emotional difficulties or everyday hassles, and two items, Q(46) easy solutions and Q(42) freedom from hassles, are complex items loading substantially on both factors. The correlations between sub-scales and the full scale were: Emotional discomfort ($r = .69$), entitlement ($r = .73$), comfort ($r = .72$), and achievement ($r = .57$).

Table 4.19 Sub-scale intercorrelation matrix (observed correlations below the diagonal in bold, and correlations corrected for attenuation above the diagonal)

| Sub-Scales | Emotional Discomfort | Entitlement | Comfort | Achievement |
|---|---|---|---|---|
| Emotional discomfort | | .54 | .72 | .59 |
| Entitlement | **.56** | | .72 | .65 |
| Comfort | **.68** | **.65** | | .54 |
| Achievement | **.51** | **.55** | **.47** | |

## 4.9 DISCUSSION

Factor analysis supported the hypothesis that frustration intolerance is a multidimensional construct, although the strong sub-scale intercorrelations indicate that these are closely interrelated. A four-factor solution was suggested as the best description of the data. Further factors appeared residual and contained few items, with the composition of the primary factors being little changed by rotation to a four-factor solution. The four-factor solution yielded meaningful sub-scales that showed high internal consistency.

However, the original six theoretical categories of frustration intolerance beliefs required some modification. The results did not indicate a separate certainty/control factor. One reason for this may be related to the meaning of control. Perfection, certainty, and control are terms describing absolute goals and it can be argued that they represent different descriptive terms for demandingness rather than categories of frustration intolerance. Each of these types of demand can be applied in a number of different content areas, for example achievement ('I must be certain I have achieved my best') or emotional discomfort ('I must be certain I won't be anxious'). Indeed, Neenan and Dryden (1999) have also suggested that control beliefs span a number of content areas, such as control of other people and of emotions.

Although control/certainty items were associated with a number of sub-scales, they loaded most frequently on the emotional discomfort factor. This is unsurprising, given the considerable evidence regarding their role in the development and maintenance and of anxiety and depressive disorders (Mineka & Kelly, 1989). For example, intolerance of uncertainty has been found a strong predictor of trait worry and emotional coping (Dugas, Freeston, & Ladouceur, 1997). Indeed, the Intolerance of Uncertainty scale was found to be a better predictor of worry scores than the Anxiety Sensitivity Index (Dugas, Gosselin, & Ladouceur, 2001). However, the need for control has also been implicated in other problem areas, and for example has been proposed as a central element in type-A personality (Appels, 1989). As regards entitlement, Bos and Lind (2002) propose a theory of fairness judgements based on the need to reduce uncertainty. They argue, with interesting parallels with the concepts of frustration intolerance and rigid demandingness, that strict rules about fairness serve to reduce the discomfort associated with uncertainty. This also illustrates how the different content areas, in this case possibly demands for comfort and entitlement, may interact.

The initial conceptualisation and item placement for the affiliation category was mistaken. This category was defined as the intolerance of frustration or discomfort in relationships. It partly involved the idea that individuals can experience frustration intolerance in the realm of ego disturbance (Neenan & Dryden, 1999). For instance, that personal rejection can lead to lowered self-esteem and/or intolerance of the discomfort or goal frustration involved. However, the items in this category did not coalesce to form a stable factor, and the idea that relationship problems could be categorised within one aspect of Frustration-Discomfort was overly simplistic. Instead, some of the items loaded on the emotional discomfort factor, suggesting that for problems involving emotional loss, such as Q(15) loss, and Q(19) support, the essential feature was the toleration of emotional pain. Other items from this category loaded on the entitlement factor, and this factor appeared most clearly associated with the intolerance of frustration in relationships.

However, the entitlement factor included a wider range of beliefs than those associated with relationships, or indeed fairness, and more generally referred to the intolerance of 'not getting what one wants'. Injustice beliefs were also related to other factors apart from entitlement, although entitlement appeared the primary focus. Thus, Q(20) unfair life, which describes a general sense of injustice, loaded more strongly on the emotional discomfort factor. This is consistent with the suggested association between unfairness and self-pity, or 'discomfort' depression (Hauck, 1974). These two items, Q(20) unfair life and Q(10) past injustice, have substantial loadings on both emotional discomfort and entitlement, and entitlement beliefs have been linked with anger. This is interesting in that the relationship between depression and anger has long been the subject of debate, and the overlap of types of fairness beliefs between factors may reflect these interactions. Thus, unfair treatment has been proposed as a central theme in the experience of hurt (Dryden, 1995b), which can be considered an amalgam of the basic emotions of anger and depressed mood (Power & Dalgleish, 1997).

Also loading on the entitlement factor along with fairness were immediate gratification items. Low frustration tolerance is frequently discussed in reference to short-term hedonism, immediate gratification, and indulgence. Indeed, Neenan and Dryden (1999) note that immediate gratification is almost synonymous with the concept of frustration intolerance, with the additional feature that demands should be instantly met. However, these terms are often used very broadly and it is unclear from the literature how they relate to other irrational beliefs. For instance, Ellis sometimes refers to avoiding emotional distress as immediate gratification, and appears to conceive of the pursuit of pleasure and the avoidance of discomfort as two ends of the same dimension. However, the present analysis suggest that discomfort intolerance and immediate gratification separate into different factors, and that fairness and gratification are best conceived as facets of a broader factor of entitlement.

Factor analysis is but a part of the process of validating a construct, not an end in itself. The Frustration-Discomfort Scale appears to be a reliable multidimensional measure of

frustration intolerance beliefs. However, it is necessary to determine whether the sub-scales are measuring the constructs described. The following chapters will test scale validity by investigating its ability to discriminate relevant groups. These studies will examine differences in dysfunctional coping, procrastination, engagement in therapy, and emotional disturbance. The discrimination between self-esteem and frustration intolerance will also be analysed in more detail.

# CHAPTER FIVE

# FRUSTRATION INTOLERANCE AND EGO-DISTURBANCE

## 5.1 INTRODUCTION

REBT distinguishes between two categories of beliefs that lead to emotional disturbance: one relating to ego disturbance and the other to frustration intolerance (Ellis, 1994a). The central purpose of the Frustration-Discomfort Scale was to measure frustration intolerance independently from issues of self-evaluation. Therefore, the construct validity of the Frustration-Discomfort Scale requires evidence of a significantly lower association with measures of self-evaluation compared to measures conceptually related to frustration intolerance.

Ego disturbance and frustration intolerance are conceived as separate constructs, although the relationship between the two remains largely unexplored. Moreover, the content structure of both types of belief has tended to be oversimplified (Neenan & Dryden, 1999). Essentially, REBT proposes that ego disturbance arises from absolute global statements about the self as opposed to specific rating of individual acts or traits. Nevertheless, an aspect of such global rating may involve relative comparisons. Thus, individuals may consider their actions to be successful, but not successful enough (Walen, DiGiuseppe, & Dryden, 1992). Nevertheless, it is unclear whether this type self-criticism always represents ego disturbance. It could be argued that only global self-condemnation falls within the definition of ego disturbance. Condemnation of actions or traits would not in itself constitute poor self-acceptance, even if associated with demandingness beliefs. For instance, an individual might berate themselves for failing to achieving a goals they absolutely should have achieved, without necessarily globally rating themselves as a failure. This type of belief could be argued to represent frustration intolerance in the domain of the self, rather than poor self-acceptance.

This has parallels with the theory that self-esteem is partly a function of the discrepancy between the ideal and actual self. Self-discrepancy theory (Higgins, 1987) proposes that discrepancies between the actual self and the 'ought' and 'ideal' selves, that is, the attributes the person believes they should or ideally want to have, contributes to emotional disturbance. This clearly has close similarities with the concept of demandingness in REBT. It also suggests a relationship with achievement frustration, and indeed perfectionistic beliefs have been suggested as particularly related to these discrepancies (Hewitt & Genest, 1990). However, whilst research has highlighted the relationship between self-esteem and perfectionism (Stumpf & Parker, 2000), the failure to achieve perfectionistic goals may also involve intolerance of failure, independent of issues of self-acceptance. The emotions connected to such 'self intolerance' might therefore involve frustration intolerant depression, or anger. Dryden (1990), in classifying angry beliefs, describes self-worth anger at being blocked at achieving important goals. However, individuals do have important personal goals that are not tied to self-worth, and when these are blocked it may lead to frustration intolerant anger ('I can't stand not achieving my potential').

In this regard, Baumeister, Smart, and Boden (1996) have argued against the frequently held view that aggression is related to underlying low self-esteem. Whilst empirical data is sparse they present a range of observational and other studies to support their hypothesis that violence is associated with the opposite tendency, that of high self-esteem and superiority to others. Thus, violence is related to threats to high self-esteem, when the person retaliates or risks losing face. However, since high esteem is not always associated with violence they propose other factors moderate this relationship. In particular the person who has ' unstable high self-esteem' (Kernis, 1993), and thus fluctuating levels of global self-esteem, should be more vulnerable to ego threat and therefore anger. There is evidence that such unstable beliefs and anger are positively related (Kernis, Grannemann, & Barclay, 1989). In other words, Baumeister and his colleagues maintain a self-esteem theory of anger, but focus on high unstable self-esteem rather than low self-esteem (Bushman & Baumeister, 1998). From a

psychodynamic perspective, narcissism has been viewed as compensating for low self-esteem, although Kohut (1978) distinguishes between two types of narcissistic anger, the first related to not getting what one wants, and the other to threatened self-worth.

As noted previously, REBT regards the concept of 'self-esteem' as embodying the very process that underlies ego disturbance, that is self-worth based on self-rating. REBT argues that this is philosophically mistaken, since human worth is not rateable. It further suggests that a personal philosophy self-rating, even with high ratings, would leave an individual vulnerable to loss of 'esteem' through failure or rejection. Therefore, REBT has replaced 'improving self-esteem' with acceptance of the self, 'warts and all'. Within this framework 'unstable high self-esteem' corresponds to high self-rating with an underlying philosophy of low self-acceptance. REBT also proposes that anger can be generated by both ego and frustration intolerance beliefs. Thus, whilst Bushman and Baumeister (1998) suggest that not receiving 'respect' causes anger due to a defence against loss of high self-esteem it could also be described in terms of frustrated entitlement. As such, high self-esteem may have no special relationship to anger beyond setting higher standards for entitlement and achievement.

In order to distinguish frustration intolerance from ego-disturbance the choice of self-esteem measure was clearly important. As Byrne (1996) notes in her review, definitions of self-concept are so varied that the researcher needs to select the test most appropriate to their theoretical framework. One possibility was to use existing REBT scales that assess self-acceptance beliefs. Whilst this has the advantage of using the same theoretical orientation, such scales lack the range of background studies enjoyed by longer standing measures, the most commonly used being the Rosenberg Self-Esteem Scale (Rosenberg, 1965). This was designed as a unidimensional measure of global self-esteem. The items on the scale, whilst not phrased in REBT language, therefore reflect global self-rating rather than rating of behaviours or traits. Since REBT posits that ego-

disturbance occurs when an individual makes 'global negative ratings' of the self (Dryden, 1995a, p.18) this scale is theoretically consistent with the REBT model[1].

It has been argued that the Rosenberg scale would benefit from the development of meaningful sub-scales (Power, 1991). However, opinions are divided as to the underlying structure of the scale. Some factor analysis studies have argued for a one-factor solution (e.g. O'Brian, 1985), but the most frequent finding is that of two factors (e.g. Bagley, Bolitho, & Bertrand, 1997). The reasons for this finding are also debated. Kaplan and Pokorny (1969) suggest that the scale is multi-dimensional with the first factor, comprising seven of the items, representing self-denigration and the other factor defence of self-worth. Hensley and Roberts (1976) also found two factors, with positive appraisal items loading on the first factor and negative items on the second. However, like other studies (Carmines & Zellar, 1974; Hagborg, 1996), they conclude that the scale is unidimensional and the factors reflect error due to response bias.

It has been argued that this response bias is due to the presentation of items in the questionnaire. The Rosenberg scale follows conventional wisdom in using reversed scored negatively worded items to reduce response bias, such as acquiescence (Nunnally, 1978). However, this comes at a cost: Reversed negatively worded items increase question complexity and make interpretation more difficult. This is likely to increase error, and lead to responses that inappropriately mirror the previous reply (Marsh, 1986). Schmitt and Stults (1985) have described such a response style, where the person reads a question, decides what is being asked and then replies in the same direction to the rest of the items, as 'careless' responding. Since the replies are not random, with the negative items scored one way and the positive another, it will result in the formation of two factors. Indeed, they show that it requires only ten percent of

[1] Following from this proposal, that the Rosenberg scale is an appropriate measure of the REBT concept of global self-rating and poor self-acceptance, the term 'self-esteem' has been used as a general term to refer to the concept of self-worth based on rating. This is to avoid using a variety of different terms when referring to the results. The author is aware that, given the conceptually differences between self-acceptance and self-esteem, that this is open to criticism.

respondents to answer some of the questions carelessly to produce a separate reverse-scored factor. They also note that the first factor is typically associated with the negative items, and increases with the degree of response error.

Kaufman, Rasinski, Lee, and West (1991) found two factors they interpreted as representing general and transient self-evaluations. They also predicted that the differentiation between the two factors should be greater with higher verbal ability. This is contrary to the prediction made by Marsh (1986) who argued that if the factors are related to response error the correlation between the negative and positive items should increase with verbal ability, since negative item errors were related to verbal ability. Marsh (1996) tested this using confirmatory factor analysis. He compared six different models, including that of Kaplan and Pokorny (1969) and Kaufman et al. (1991) with models reflecting response error. The results supported a unidimensional model with substantial error largely associated with the negative items. It also showed that correlations between the two factors increased with verbal ability. However, this study was limited in that only seven of the scale items were included in the analysis. Corwyn (2000) using confirmatory factor analysis evaluated the full scale comparing eight competing models. As before, a two-factor model was indicated and the model incorporating response error proved a better fit than models without such effects. The response bias was primarily associated with negative items and decreased with verbal fluency. He concludes that the theory underlying the scale is not questioned by this research, but users of the scale need to be aware of the response bias and address this.

A further difficulty regarding scale interpretation is that scoring methods vary. For instance, the Bagley et al. and the Sheasby, Barlow, Cullen, and Wright (2000) studies have high scores indicative of good self-esteem. This is opposite to the scoring method of some manuals (e.g., Johnson, Wright, & Weinman, 1995). The present results, to be compatible with reported studies and intuitively more understandable, has followed a high score equals high self-esteem method. A further complication in comparing research is that different studies have also used different versions of the Rosenberg

scale. The test format used in this research uses the version of Johnson et al. (1995), although other studies use an alternative version with a different order of items (e.g. Bagley et al., 1997; Sheasby et al., 2000). The item list as used in this study, along with reliability statistics, are shown in table 5.8.

This study initially investigates the structure and adequacy of the Rosenberg scale. Specifically, it examines whether the scale is best described by a two-factor model and the degree these factors represent meaningful psychological dimensions, rather than response error. Previous studies have been limited by reliance on child, adolescent, or student samples, and adult studies have tended to use groups without psychological problems. Next, the relationship of frustration intolerance beliefs with self-esteem is examined.

## 5.2 METHOD

### 5.2.1 PARTICIPANTS AND PROCEDURE

The validation analysis of self-esteem involved the clinical group of 242 individuals. Cross sectional data were gathered from the clinical group using the questionnaire packet described in chapter three.

Opinions are divided regarding the best method of testing multifaceted constructs (Hull, Lehn, & Tedlie, 1991). The use of a total score more adequately represents the general frustration construct. However, by summing the sub-components the specific effects of individual sub-scales are lost. Thus, a regression approach where individual sub-scale scores are simultaneously entered as predictors is often used. This enables a better test of the unique effects of sub-scales, although strong relationships between the sub-scales can cause problems. For example, when sub-scales have substantial overlapping variance some scales may fail to remain significantly related to the criterion, although they may have important individual associations.

In conducting the regression analyses care was taken to address normality assumptions and to identify the presence of influential outliers. Screening for univariate outliers and violations of normality were carried out on each individual scale, and have been reported when appropriate in the descriptive statistics for these measures. In order to ensure that the data was representative of the population, only truly exceptional observations were considered for deletion, (Hair, Anderson, Tatham, & Black, 1998). Further, to avoid overfitting data, outliers among the variables were examined separately from solution outliers. Two methods of outlier detection were used: The analysis of residuals and the graphic examination of partial regression plots. Studentised residuals were inspected and outliers with values in excess of ± 3.3 were considered for exclusion (Tabachnick & Fidell, 2000). Likewise, plots of standardised residuals with leverage values and with Cook's distance, as a measure of influence, were examined. Tolerances for each variable in the regression were also examined to exclude possible effects of multicollinearity. In general, few problems were experienced following initial data screening and these are detailed when appropriate.

## 5.3 RESULTS

### 5.3.1 ADEQUACY OF THE SELF-ESTEEM MEASURE: PRELIMINARY ANALYSIS

There was one missing case. Standard scores identified three cases with total scores between ± 2.5 and 3, but no cases above ± 3. Examination of these cases, which had high self-esteem scores, indicated that the responses were consistent and therefore, although extreme, they were retained as valid members of the population. However, given the need for caution regarding 'careless responding' voiced by previous studies, particular attention was paid to the scoring patterns between positive and negative items. Analysis showed there was a significant difference between the two means, $t\ (240) = 9.13$, $p < .001$, with individuals scoring higher on negative items. A difference score between negative and positive items was computed (table 5.1). Five cases had markedly

higher positive than negative item scores, ($Z < -2.73$). That is individuals indicated that they had relatively lower self-esteem on positive items and higher self esteem on negative items. There was also four extreme scores with the opposite pattern, that is, higher negative than positive item scores ($Z > 2.26$). Examination of these extreme scores indicated eight cases, four positive, and four negative. They were judged as being spoilt and removed from the analysis. A further positive case, noting responses due to poor physical health, was also eliminated. Thus, 232 cases were included in the analysis.

Table 5.1 Initial difference scores between negative and positive worded items

| | | Frequency | Valid Percent |
|---|---|---|---|
| Valid | -8 | 4 | 1.7 |
| | -7 | 7 | 2.9 |
| | -6 | 8 | 3.3 |
| | -5 | 19 | 7.9 |
| | -4 | 15 | 6.2 |
| | -3 | 29 | 12.0 |
| | -2 | 44 | 18.3 |
| | -1 | 40 | 16.6 |
| | 0 | 33 | 13.7 |
| | 1 | 20 | 8.3 |
| | 2 | 11 | 4.6 |
| | 3 | 6 | 2.5 |
| | 6 | 1 | .4 |
| | 7 | 1 | .4 |
| | 8 | 1 | .4 |
| | 9 | 1 | .4 |
| | 11 | 1 | .4 |
| | Total | 241 | 100.0 |

The removal of outlying cases requires very careful consideration. The most important decision was whether the scores, whilst extreme, were still representative of the sample population. If they are, than removal will result in an overfitted model not truly reflecting the true range of scores. However, if the scores are spurious then these cases will exert a false and distorting influence, the more so due to their extreme position. The pattern of responses, in straight lines on one side or other of the questionnaire with no regard to reversed items, indicated careless responding. Due to the reversed questions, it

is very unlikely that responses would be so diametrically opposed to each other. It suggests that individuals have decided that a response to the left or right of the scale represents low self-esteem, and have continued with this regardless of item direction, as described Schmitt and Stults (1985). These authors recommend that Rosenberg scores are carefully examined to detect patterns of careless responding, and that such cases are 'best deleted prior to further analysis'. However, they also note that the identification of careless responding is not straightforward. Certainly, similar endorsement of reversed items is indicative of response error, and the simplest method of detecting this is to examine the difference between negative and positive item scores.

As a further check on the appropriateness of the deleted items, the negative and positive scale scores were compared to another measure of self-worth, the worthlessness rating from the background inventory (table 5.2). For this, patients were asked to rate how intensely they had experienced a sense of 'worthlessness' over the past month. All except one outlying case had rated worthlessness at the maximum over the previous month, suggesting their 'good' self-esteem scores were in error. Following removal of outliers, both the negative and positive self-esteem scales increased their correlation with the worthlessness measure. The negative and positive scales were strongly correlated ($r\ (232) = .75$, $p < .001$), a noticeable increase compared to before removal of outliers ($r\ (240) = .60$). The correlation between the positive and negative scales and the full scale increased ($r\ (232) = .93$ and $r\ (232) = .94$) compared to before data screening ($r\ (240) = .87$ and $r\ (240) = .89$). Examination of remaining cases suggested a much more mixed pattern of careless responses. There was a tendency for responses to be influenced by immediately preceding items, and to be answered in the same direction whether or not the item was reversed.

Table 5.2 Frequency distribution: feelings of 'worthlessness'

| | | Frequency | Valid Percent |
|---|---|---|---|
| Valid | not at all | 36 | 15.1 |
| | slightly | 40 | 16.7 |
| | moderately | 61 | 25.5 |
| | very much so | 102 | 42.7 |
| | Total | 239 | 100.0 |

### 5.3.2 ROSENBERG SCALE: DESCRIPTIVE ANALYSIS

The distribution of scores is shown in figure 5.1, the mean and standard deviation was 23.39 (SD = 5.75) (table 5.3). As expected, the clinical group mean in the present study is significantly lower ($t(231) = 25.56$, $p < .001$) than that found by Chamberlain and Haaga (2001) in an adult non-clinical group (mean = 33.04, SD = 5.39). There was a significant correlation between age and self-esteem in the present sample ($r = .22$, $p < .001$), which is consistent with previous findings.

Bagley et al. (1997) also reported a significant difference between male (31.36, SD = 5.13) and female students mean scores (28.32, SD = 5.49). This gender difference was confirmed by the present results (table 5.4), with females having a significantly lower level of overall self-esteem than males ($F(1, 230) = 6.35$, $p < .05$). Females also had lower levels of positive self-esteem ($F(1, 230) = 7.08$, $p < .01$), and, to a lesser extent, negative self-esteem ($F(1, 230) = 4.34$, $p < .05$). 'Very low' self-esteem (scores below 21) were found in 2.7% of high school students, compared with 38% of patients in the present clinical population.

Table 5.3 Means and standard deviations of Rosenberg scales

| | Mean | SD |
|---|---|---|
| Full scale | 23.39 | 5.75 |
| Negative sub-scale | 10.79 | 3.29 |
| Positive sub-scale | 12.59 | 2.87 |

Figure 5.1 Rosenberg Self-esteem scores

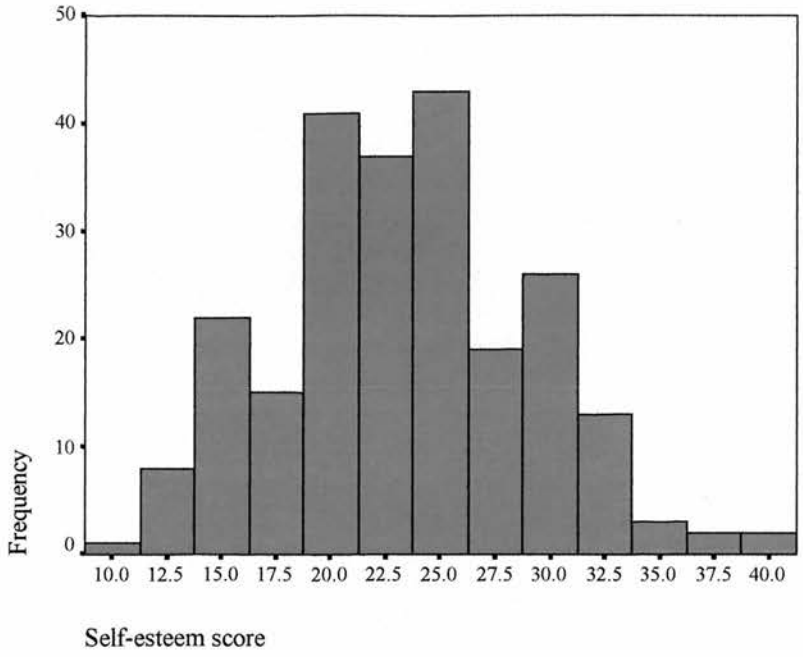



Table 5.4 Means and standard deviations of Rosenberg scale by gender

| | Mean | | Standard deviation | |
|---|---|---|---|---|
| | Male | Female | Male | Female |
| Full scale | 24.59 | 22.65 | 5.97 | 5.51 |
| Negative items | 11.36 | 10.44 | 3.49 | 3.11 |
| Positive items | 13.22 | 12.21 | 2.90 | 2.79 |

The Skewness and Kurtosis statistics were within acceptable levels for the full scale, and the negative and positive sub-scales, with all standard scores below one deviation. Cronbach's Alpha was .90 for the full scale, and .83 for the positive items and .82 for the negative items (table 5.5). Bagley et al. (1997) reported full-scale alpha values of between .85 to .90 for their adolescent samples. The ordering of items may be important in the pattern of response error, and will be discussed further.

Table 5.5 Rosenberg scale: Reliability and item list

| | | Corrected Item–Total Correlation |
|---|---|---|
| 1 | I feel that I am a person of worth, at least on an equal plane with others | .689 |
| 2 | All in all, I am inclined to feel I am a failure | .694 |
| 3 | I feel I have a number of good qualities | .534 |
| 4 | I am able to do things as well as most other people | .563 |
| 5 | I feel I do not have much to be proud of | .683 |
| 6 | I take a positive attitude towards myself | .691 |
| 7 | On the whole, I am satisfied with myself | .734 |
| 8 | I wish I could have more respect for myself | .589 |
| 9 | I certainly feel useless at times | .645 |
| 10 | At times I think I am no good at all | .686 |

Alpha = .900 N = 232

### 5.3.3 FRUSTRATION INTOLERANCE AND SELF-ESTEEM

The correlation matrix between Frustration-Discomfort and self-esteem scores shows an expected significant relationship between the two types of belief categories (table 5.6).

Table 5.6 Correlations between the Frustration-Discomfort Scale and self-esteem scale

| | Full Scale | Positive Scale | Negative Scale |
|---|---|---|---|
| Frustration-Discomfort total | -.36*** | -.28*** | -.39*** |
| Emotional discomfort | -.44*** | -.36*** | -.45*** |
| Entitlement | -.16* | -.09 | -.20** |
| Comfort | -.36*** | -.31*** | -.35*** |
| Achievement | -.17** | -.06 | -.24*** |

N = 232. *** $p < .001$, ** $p < .01$, * $p < .05$

However, the entitlement and the achievement frustration sub-scales had a noticeably weaker association with self-esteem. Indeed, they failed to correlate significantly the positive self-esteem scale, whilst significantly associated with negative scale. This suggests that higher achievement and entitlement scores are associated with higher

levels of negative condemnation but are unrelated to the degree of positive self-acceptance.

A series of regression analyses were conducted to explore the interaction between Frustration-Discomfort and self-esteem. First, all four sub-scales were entered as a block with self-esteem as the criterion measure (table 5.7). The regression analysis was highly significant with all the variables, except achievement, contributing uniquely to self-esteem score. The overlapping variance between self-esteem and frustration-intolerance, as indicated by $R^2$, amounts to 23% of shared variance. This is not changed if age is controlled.

Table 5.7 Multiple regression analysis: Frustration-Discomfort sub-scales predicting self-esteem

| Variables Entered | t | p | Beta |
|---|---|---|---|
| Emotional discomfort | 5.10 | .000 | -.42 |
| Entitlement | 2.58 | .006 | -.24 |
| Comfort | 2.88 | .006 | -.23 |
| Achievement | 0.12 | .926 | -.07 |

Multiple R = .48
$R^2$ = .23
F (4, 227) = 17.04, p < .001

Since frustration intolerance and self-esteem are both associated with negative affect, a relationship between these scales may just reflect an overlapping relationship with emotional disturbance. To control for this HAD scores were entered first in the regression equation and then on step two the Frustration-Discomfort sub-scales. Frustration-Discomfort remained significant associated with self-esteem controlling for negative affect ($R2_{cha} = .06$, $F_{cha}(4,224) = 4.22$, $p < .001$), accounting for 6% of shared unique variance. However, only emotional discomfort remains a significant independent predictor (table 5.8).

Table 5.8 Multiple regression analysis: Frustration-Discomfort sub-scales predicting self-esteem, controlling for negative affect.

| Variables Entered | t | p | Beta |
|---|---|---|---|
| Step 1 | | | |
| HAD score | 8.90 | .000 | .51 |
| Step 2 | | | |
| Emotional discomfort | 3.46 | .001 | -.28 |
| Entitlement | 1.50 | .135 | .13 |
| Comfort | 1.35 | .180 | -.12 |
| Achievement | 0.64 | .524 | .06 |

### 5.3.4 HIGH AND LOW SELF-ESTEEM AND FRUSTRATION INTOLERANCE

To investigate whether high levels of entitlement or achievement had corresponding high levels of self-esteem quartile scores of the Frustration-Discomfort Scale were examined. As expected, there were systematic and significant reductions in self-esteem with higher overall levels of frustration intolerance (table 5.9). Both comfort and emotional discomfort show a lowering of self-esteem with greater levels of frustration intolerance. However, this systematic reduction in self-esteem is not so apparent with the achievement and entitlement sub-scales. Indeed, for entitlement the difference between the quartiles is not significant. Individuals in the highest quartile on achievement frustration have a mean self-esteem score of 23.44 equivalent to the 50$^{th}$ percentile, and mean positive self-esteem sub-scale score of 13.02, equivalent to the 57$^{th}$ percentile. Likewise, even for the top 10% of entitlement scores the mean self-esteem score was 22.57 equivalent to a low average score for the general population. A similar mean self-esteem score was found for the 10$^{th}$ percentile of achievement scores (21.68). In fact, those individuals with the least demands for achievement and entitlement had the highest self-esteem, with mean scores for the 1$^{st}$ percentile of these sub-scales 26.40 and 25.04 respectively.

Table 5.9 Self-esteem means for Frustration-Discomfort quartiles

| Total Frustration-Discomfort | | Emotional discomfort | |
|---|---|---|---|
| High | 21.25 | High | 20.28 |
| 3 | 22.59 | 2 | 23.50 |
| 2 | 23.26 | 3 | 23.23 |
| Low | 26.54 | Low | 26.66 |
| | F = 9.58*** | | F = 13.66*** |
| Entitlement | | Comfort | |
| High | 22.30 | High | 20.74 |
| 3 | 23.05 | 3 | 22.95 |
| 2 | 24.44 | 2 | 24.07 |
| Low | 23.91 | Low | 25.76 |
| | F = 1.51, ns | | F = 8.53*** |
| Achievement | | | |
| High | 23.44 | | |
| 3 | 22.33 | | |
| 2 | 22.12 | | |
| Low | 25.64 | | |
| | F = 4.85** | | |

N = 232, (df = 3, 228) ***p < .001, **p < .01, *p < .05

Thus, there is no evidence that individuals with high entitlement or achievement scores have high self-esteem. Nevertheless, the top quartile of entitlement had significantly higher self-esteem relative to emotional discomfort ($t(57) = 3.408$, $p < .01$), and comfort ($t(57) = 2.38$, $p < .05$). As did high achievement frustration when compared to emotional discomfort ($t(57) = 4.99$, $p < .001$) and comfort ($t(57) = 4.37$, $p < .001$). Therefore, these groups have relatively higher self-esteem than other patients but still have a lower average score when compared to the general population.

### 5.3.5 RELATIONSHIP OF ROSENBERG SCALES AND EMOTIONAL DISTURBANCE

The correlations of the Rosenberg scale and emotional disturbance measures are shown in table 5.10. Interestingly, the positive scale is not significantly correlated with anger, which would be consistent with the proposal that these two scales measure slightly different aspects of self-worth, with the negative scale reflecting self-condemnation. Depression and anxiety scores are significant correlated with both positive and negative sub-scales.

Table 5.10 Correlations between Rosenberg scale and emotional disturbance measures

| | Full Scale | Negative items | Positive items |
|---|---|---|---|
| TAS | -.17* | -.19** | -.11 |
| HAD anxiety | -.42*** | -.39*** | -.40*** |
| HAD Depression | -.47*** | -.41*** | -.48*** |

N = 232 ***p < .001, **p < .01, *p < .05

These results do not support the findings of Kaplan and Pokoney (1969) in which their positive 'defence of self-worth' factor was uncorrelated with either depression or anxiety. Calculation of scores based on their factors showed that 'defence of self-worth' was significantly related to anxiety ($r = -.28$, $p < .001$) and depression ($r = -.38$, $p < .001$). Their negative 'self-derogation' scale was also significantly correlated with both these measures ($r = -.44$, $p < .001$; and $r = -.48$, $p < .001$).

### 5.3.6 RELATIONSHIP OF THE DIFFERENCE SCORE TO OTHER MEASURES

The difference score distribution showed acceptable skewness (Z = –1.74) and kurtosis (Z = -.77). The relationships between the Frustration-Discomfort sub-scales and the difference score were linear and contained no significant outliers. Apart from comfort, all of the Frustration-Discomfort sub-scales had significant correlations with the difference score. That is, the higher the negative score relative to the positive score the greater the degree of frustration intolerance (table 5.11). There was a weak correlation between age and the difference score ($r = .17$, $p = < .01$), but no association with gender ($F\ (1,231) = .04$, ns). Anger was significantly correlated with the difference score ($r\ (232) = -.14$, $p < .05$) but not depression ($r\ (230) = -.02$, ns) nor anxiety ($r\ (230) = -.07$, ns).

Table 5.11 Correlations between difference score and Frustration-Discomfort sub-scales

| | Difference score |
|---|---|
| Full scale | -.22*** |
| Emotional discomfort | -.21** |
| Entitlement | -.17** |
| Comfort | -.12 |
| Achievement | -.28*** |

N = 232 ***p < .001, **p < .01, *p < .05

A simultaneous multiple regression was conducted to investigate the contribution of frustration intolerance beliefs to the difference score (table 5.12). With the Frustration-Discomfort sub-scales entered simultaneous as a block, the overall model was significant. However, only the achievement frustration sub-scale remained a unique predictor of the difference score when controlling for shared variance.

To examine the relationship of age and achievement frustration a hierarchical regression analysis was conducted (table 5.13). Age was entered at the first step, followed by achievement and finally an interactive term of age x achievement, to determine if age

moderated the relation between achievement and the difference score. Both age and achievement produced significant change in $R^2$. Since this was little different from the variance accounted for by achievement on its own ($R^2$ = .08), this would suggest that both age and achievement are independent predictors with little overlap of variance. Consistent with this interpretation the interactive term produced virtually no change in $R^2$, indicating that the effects of achievement are not moderated by age.

Table 5.12 Multiple regression analysis: Frustration-Discomfort sub-scales predicting difference score

| Variables Entered | t | p | Beta |
|---|---|---|---|
| Emotional discomfort | 1.63 | .117 | -.14 |
| Entitlement | 0.22 | .900 | .02 |
| Comfort | 0.81 | .449 | .07 |
| Achievement | 3.10 | .003 | -.25 |

Multiple R = .29
$R^2$ = .09
Adjusted $R^2$ = .07

F (4, 227) = 5.34, p < .001

Table 5.13 Summary of hierarchical regression analyses: Age and achievement on difference score

| Step | $R^2$ | $R^2$cha | t | p | Beta |
|---|---|---|---|---|---|
| 1 age | 0.03 | 0.03 | 2.70 | .008 | .18 |
| 2 achievement | 0.10 | 0.07 | 4.23 | .001 | -.27 |
| 3 age x achievement | 0.11 | 0.00 | 0.98 | .359 | -.23 |

F for all regression models p < .01

To control for shared variance with self-esteem a further simultaneous regression was conducted. When age and self-esteem were entered as a block achievement remained significant (table 5.14). This indicates that the relationship between achievement frustration and the difference score is independent of self-esteem. The partial correlation

between achievement frustration and the difference score was also found to be the same as the zero order correlation ($r = -.28$, $p < .001$, $pr = -.28$, $p < .001$). Indicating the relationship is not due to overlap with negative affectivity.

Table 5.14 Multiple regression analysis: Achievement, self-esteem, and age on difference score

| Variables Entered | t | p | Beta |
|---|---|---|---|
| Age | 2.25 | .026 | .14 |
| Self-esteem | -1.87 | .063 | -.12 |
| Achievement | -3.86 | .001 | -.25 |

Multiple R = .34
$R^2$ = .11
Adjusted $R^2$ = .10
$F(3, 226) = 9.60$, $p < .001$

As discussed above, one explanation of the difference between the positive and negative scales has been that it reflects careless responding. However, examination of the scattergram shows that the difference score increases with higher achievement scores (figure 5.2). It will also be observed that, when the achievement score is split into four quartiles, the higher achievement frustration the weaker the correlation between the negative and positive scales (table 5.15). This *decrease* in the correlation with higher achievement frustration suggests that the relationship is not an artefact of careless responding. This is because individuals with high scores on achievement frustration, a sub-scale that reflects perfectionist standards, would be expected to be more conscientious in avoiding response errors. In which case the correlation should *increase* with greater achievement scores. This is contrary to a simple explanation of the positive–negative discrepancy involving measurement error. Rather it suggests this represent a real difference in responding that also reflects achievement frustration beliefs.

Figure 5.2 Scattergram for achievement frustration and difference score

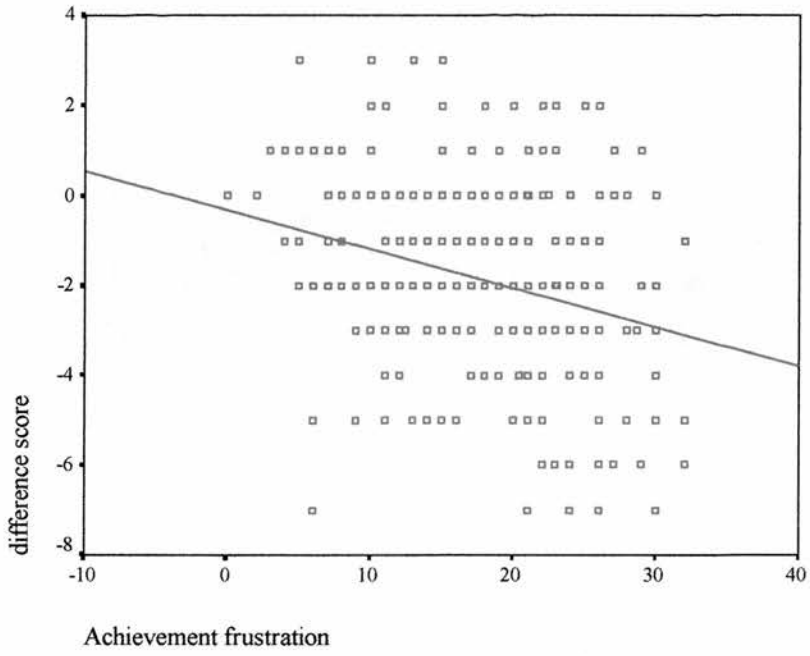



Table 5.15 Correlations between the negative and positive items by achievement scale quartiles.

| | |
|---|---|
| 1St quartile | 0.82 |
| 2nd quartile | 0.82 |
| 3rd quartile | 0.68 |
| 4th quartile | 0.63 |

N = 232 All $p < .001$

The negative and positive scale means for difference score quartiles was examined (table 5.16). This shows that the difference between these scores reflects increases in negative scores ($F(3,228) = 22.99$, $p < .001$), there was no significant change in positive item scores ($F(3,228) = 2.65$, ns). In other words, the difference score represents increased negative rather than positive responding.

Table 5.16 Negative and positive scale means by difference scale quartiles

| | Positive scale | Negative scale |
|---|---|---|
| 1St quartile | 13.49 | 8.32 |
| 2nd quartile | 12.68 | 10.28 |
| 3rd quartile | 12.39 | 11.39 |
| 4th quartile | 12.00 | 12.72 |

### 5.3.7 CONFIRMATORY FACTOR ANALYSIS

To further test the hypothesis that the self-esteem scale did have two facets, reflecting psychologically meaningful processes rather than purely measurement error, a structural equation modelling approach was used, utilising the AMOS program (Arbuckle, 1999). The ratio of cases to observed variables is 23:1, and the cases to parameter ratio 6:1, both meeting acceptable criteria. A sample size of about 200 is usually adequate with a moderate model size and when the variables are normally distributed (Hair et al., 1998).

A series of competing models, as indicated in the literature and discussed above, were compared and their adequacy assessed by a variety of fit indices. Model A was the one-factor scale representing global self-esteem; model B represented positive and negative items; model C represented the two factors suggested by Kaufman et al. (1991) (items 9 and 10 forming the transient scale); and model D represented the two factors proposed by Kaplan and Pokorny (1969) (items 1, 3 and 4 forming the self-worth scale). In addition, measurement error due to item wording was also evaluated using the correlated uniqueness method (Marsh, 1989; Bagozzi, 1993). In this method, covariances are fitting among the negative and positive items residuals, the correlation between error terms being used to represent method effects. To test whether method effects were associated predominately with either negative or positive worded items, either the negative or positive error terms were allowed to freely correlate within a one-factor model (models E and F). Next, a one-factor model that incorporated a more complex arrangement of measurement error was tested. Examination of the response patterns had suggested that, in addition to method error due to difficulty with negative items, that errors were also

related to item grouping. That is, pairs of items similar items tended to be scored in the same direction, response bias depending on particular sequences of items. To test this the error terms of pairs of items were allowed to correlate and this was incorporated into the one and two-factor models (models G to J).

Lastly, the above results had suggested that the difference between the positive and negative scales was related to achievement frustration. To test this hypothesis, the one factor model was fitted to a median split of achievement scores (models K and L). If achievement frustration is differentially related to the negative and positive scales, then the one-factor solution will have a poorer fit with higher levels of achievement. Since, it may be assumed, individuals high on perfectionism will not be more careless in responding than those low on perfectionism, improvements in fit should reflect trait effects rather than response error. Whilst splitting the group reduces sample size each sample remained within the recommended minimum of 100 (Joreskog & Sorbom, 1989). The most frequently used measure of overall fit is the model Chi-square, which ensures that the model is a good representation of the overall set of relationships. A non-significant $\chi^2$ indicates a good fit, Although moderate sample sizes are more likely to often lead to significant $\chi^2$ values (Bentler & Bonett, 1980). The comparative fit index (CFI) is an incremental fit index and produces a statistic between zero and one (Bentler, 1990). Values above .90 are regarded as indicating adequate fit, and above .95 as a good fit (Bentler & Bonett, 1980). The root mean square of approximation (RMSEA) is a non-incremental fit index that attempts to correct for inadequacy of the Chi-square with large samples (Browne & Cudeck, 1993). It represents the discrepancy per degree of freedom. Values over .1 should lead to rejection of the model, those from .05 to .08 are acceptable, and values below .05 indicate a close fit to the data. A further recommended incremental fit index is the Tucker-Lewis (1973) index. This index takes into account model parsimony with additional paths reducing the TLI value. Like the CFI, a TLI score of above .90 is regarded as reasonable.

Table 5.17 Goodness of fit indices for Rosenberg self-esteem models

| Model | df | $\chi^2$ | p | TLI | CFI | RMSEA |
|---|---|---|---|---|---|---|
| A One-factor | 35 | 160.08 | .00 | .969 | .980 | .122 |
| B Negative/positive factors | 34 | 132.75 | .00 | .975 | .984 | .110 |
| C Transient/general factors | 34 | 101.90 | .00 | .983 | .989 | .091 |
| D Self-worth/denigration factors | 34 | 131.73 | .00 | .975 | .985 | .109 |
| E One-factor negative errors | 25 | 70.59 | .00 | .984 | .993 | .087 |
| F One-factor positive errors | 25 | 81.98 | .00 | .980 | .991 | .097 |
| G One-factor (paired errors) | 29 | 33.70 | .251 | .999 | .999 | .026 |
| H Negative/positive factors (Paired errors) | 28 | 33.43 | .220 | .999 | .998 | .028 |
| I Transient/General factors (Paired items) | 29 | 33.70 | .251 | .999 | .999 | .026 |
| J Self-worth/denigration factors (Paired items) | 28 | 32.21 | .262 | .999 | .999 | .025 |

Table 5.18 Goodness of fit indices: One-factor model comparing high and low achievement score groups (n = 116 and 124)

| Model | df | $\chi^2$ | p | TLI | CFI | RMSEA |
|---|---|---|---|---|---|---|
| K High achievement score | 35 | 117.65 | .00 | .956 | .972 | .143 |
| L Low achievement score | 35 | 99.35 | .00 | .970 | .981 | .122 |

These results indicated that the two-factor models had better fits to the data compared to the one factor model A (table 5.17). Being nested, a formal $\chi^2$ difference test could be used to these compare models. Thus, the negative and positive sub-scale model was significantly better than the one factor model ($\chi^2$ diff = 27.33, df = 1, $p < .001$). Nevertheless, these models had significant $\chi^2$, and failed to prove adequate fits regarding

RMSEA values. However, the two models that took into account measurement error were superior to the simple two-factor models. Thus, the negative error model (E) was a significantly better fit than the negative/positive model (B) ($\chi^2$ diff = 62.16, df = 9, $p < .001$). On the other hand, the more complex error models (G to J) with correlated pairs of similar items, produced even closer fits, with all models having a very close fit to the data. Interestingly, the Kaufman et al. (1991) model (C), which has the best fit of the basic models, loses its superiority when method error is incorporated. This suggests that the two items (9 and 10) representing the transient scale may factor together due to their position on the scale. Certainly, as was found by Corwyn (2000), this pair of items had uniquenesses with the highest correlations (.46 in the two-factor model).

As predicted, fitting the one-factor model to high and low achievement scores (models K and L) showed that high scores had a noticeably worse fit (table 5.18). This indicated that the two facets of global self-esteem do differ as regards achievement beliefs. The models are graphically displayed in figures 5.3 to 5.12 with standardised parameter estimates and factor loadings.

FIGURE 5.3 Self-esteem model A

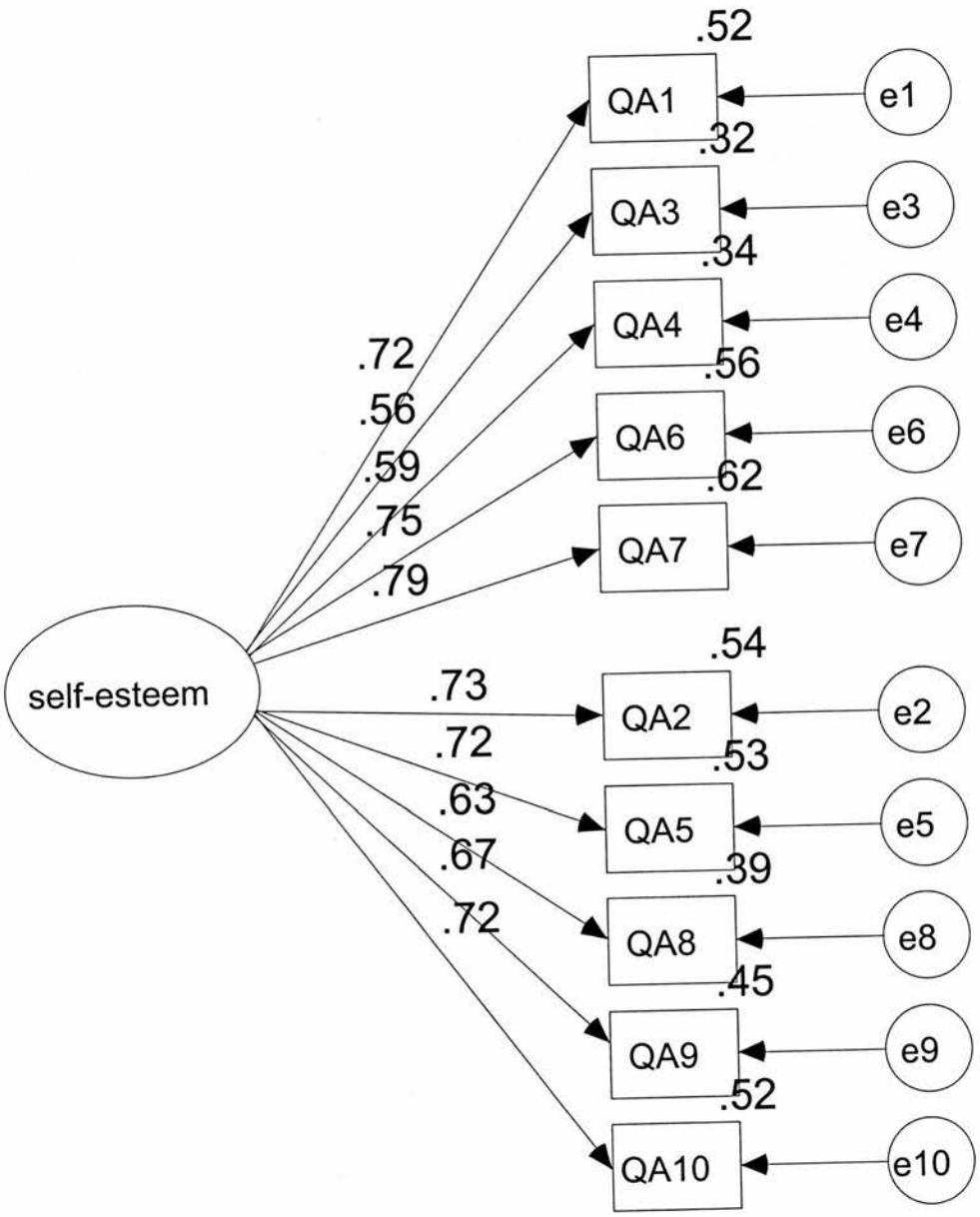


FIGURE 5.4 Self-esteem model B

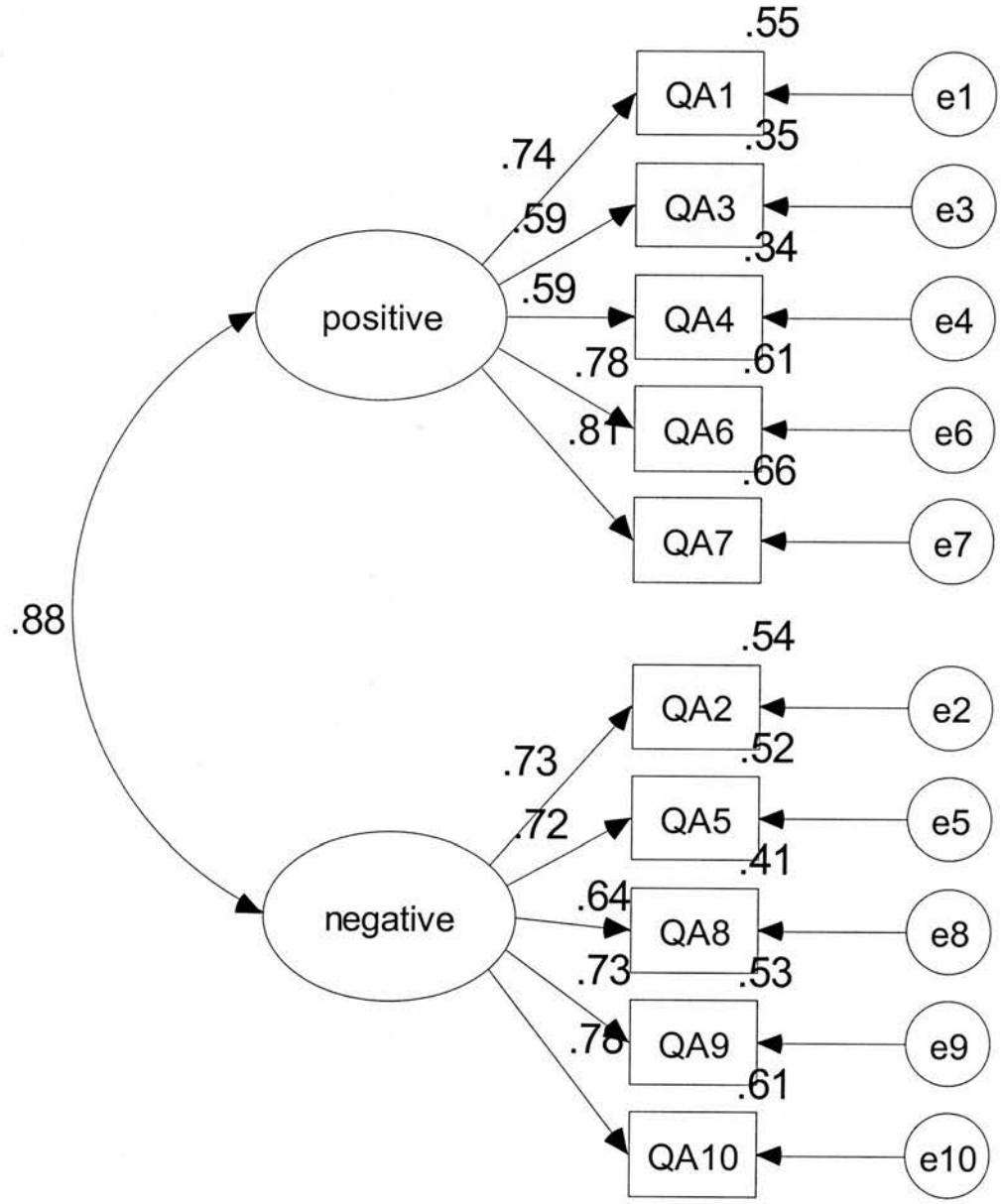


FIGURE 5.5 Self-esteem model C

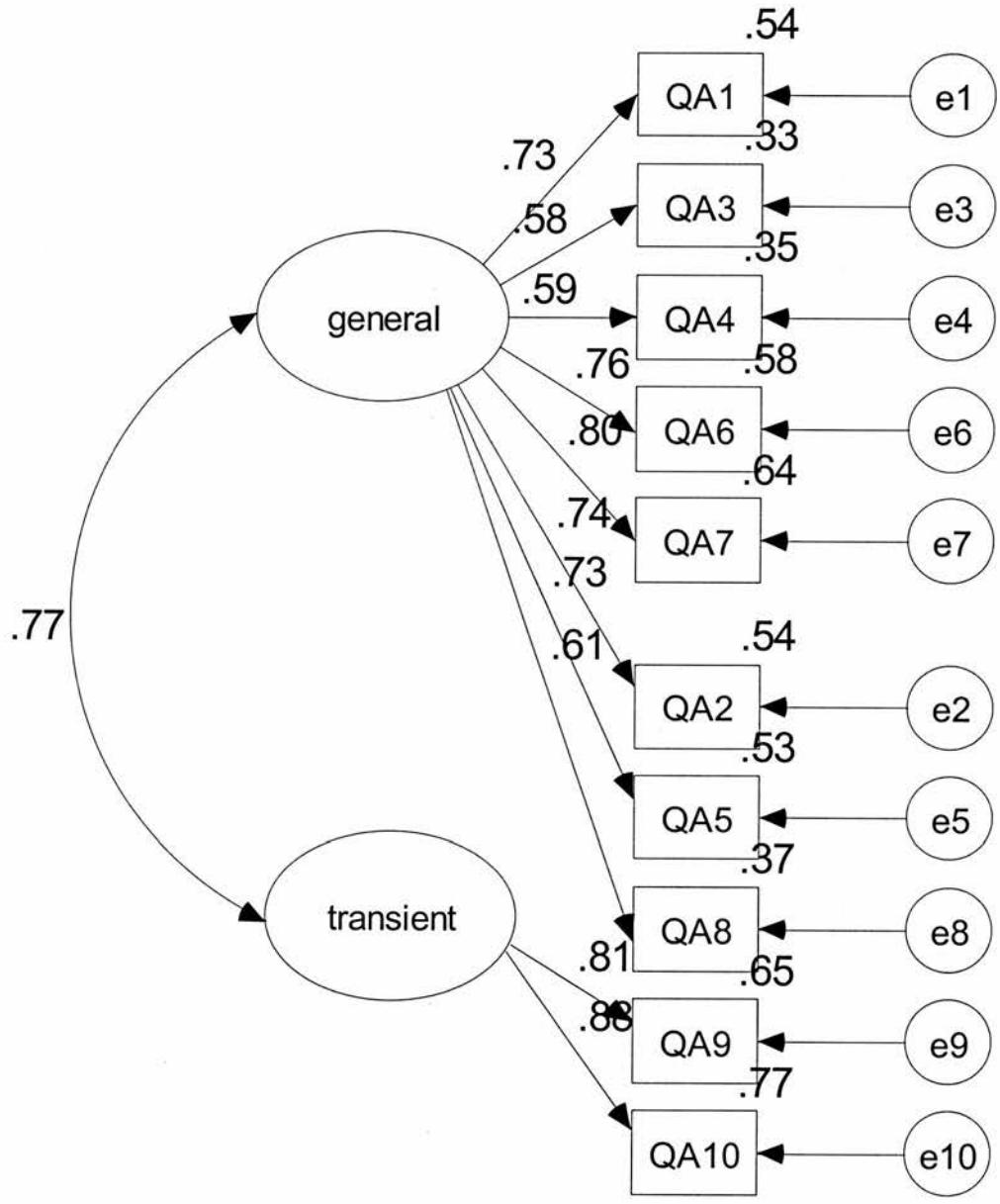


FIGURE 5.6 Self-esteem model D

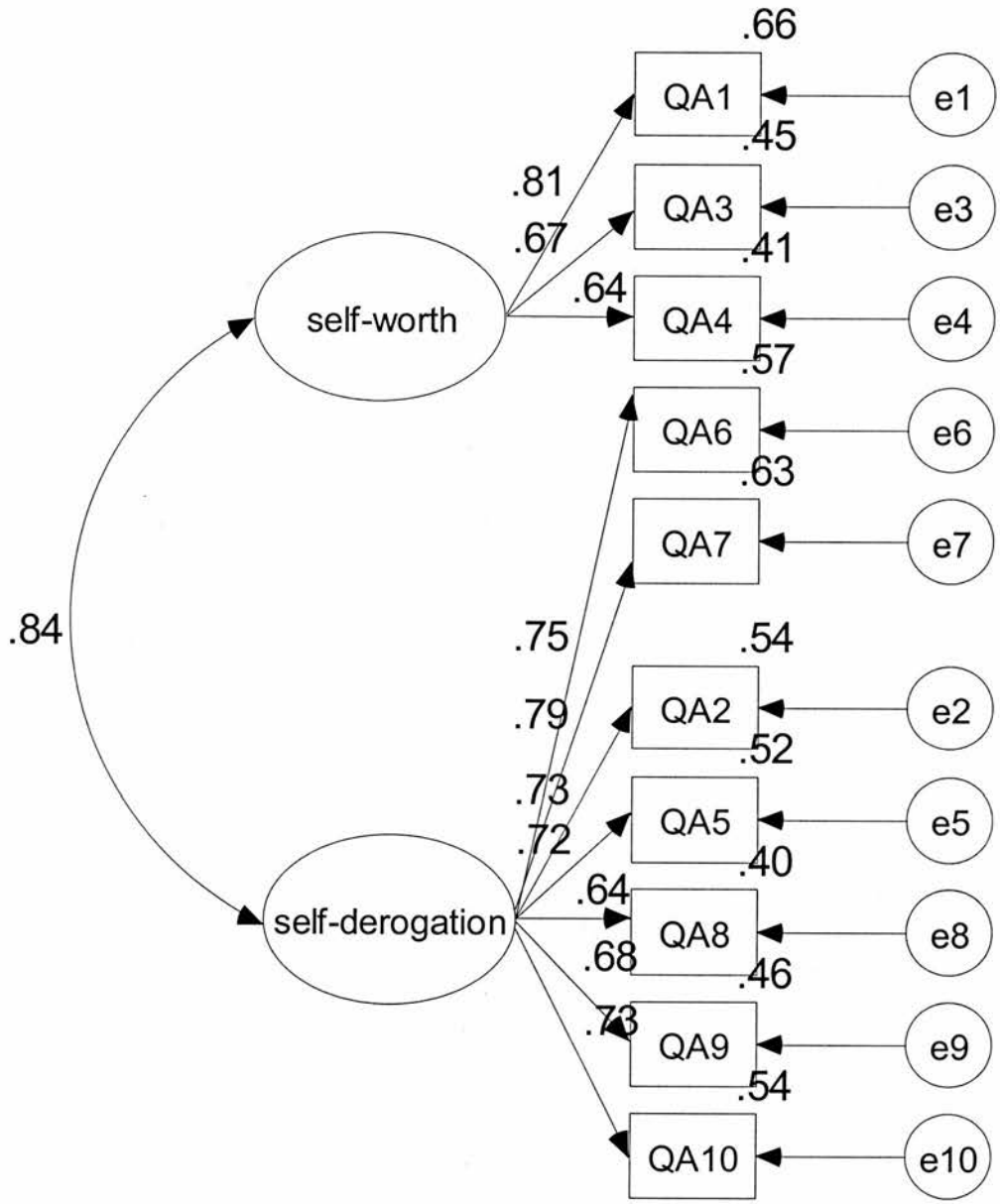


FIGURE 5.7 Self-esteem model E

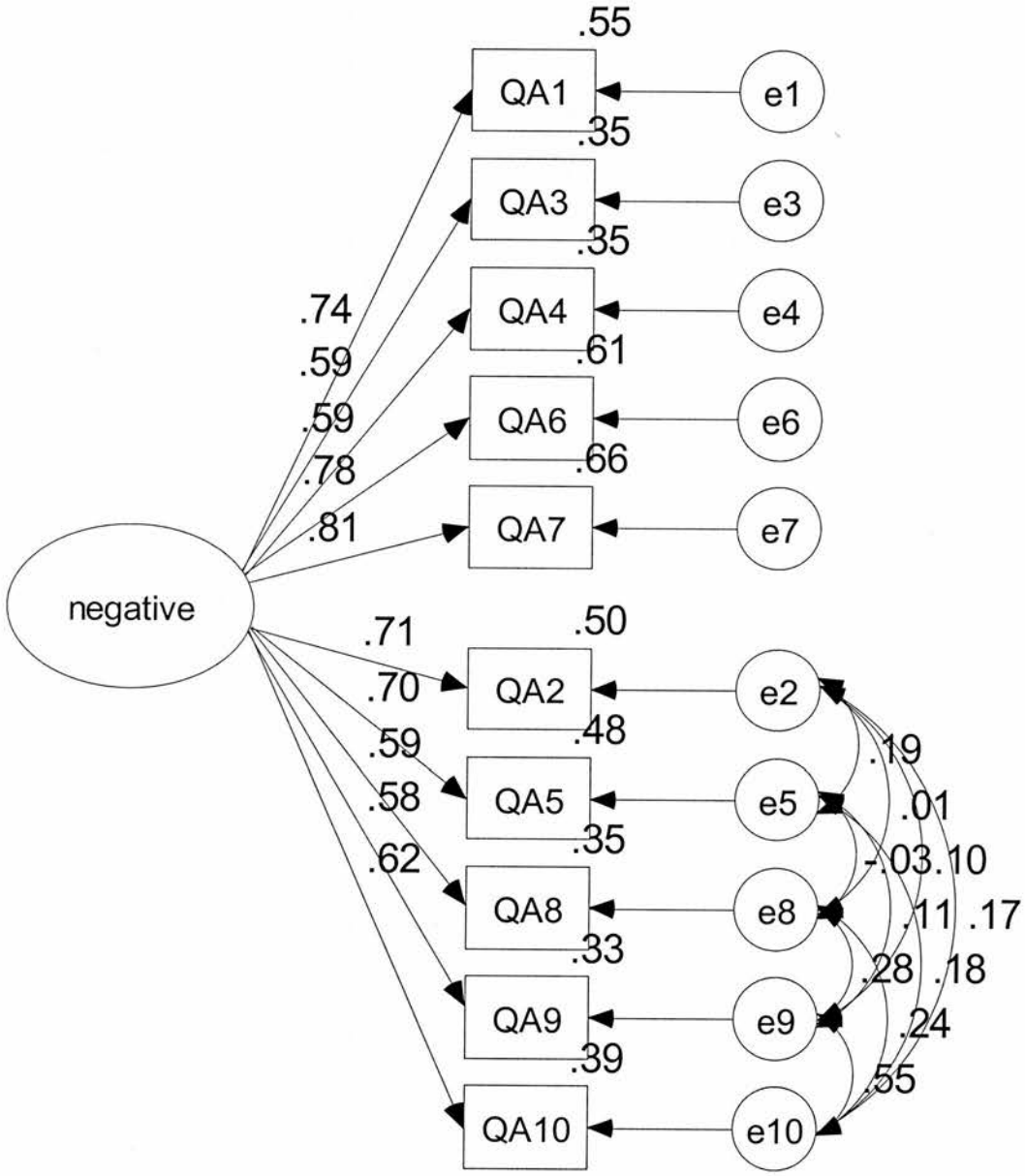


FIGURE 5.8 Self-esteem model F

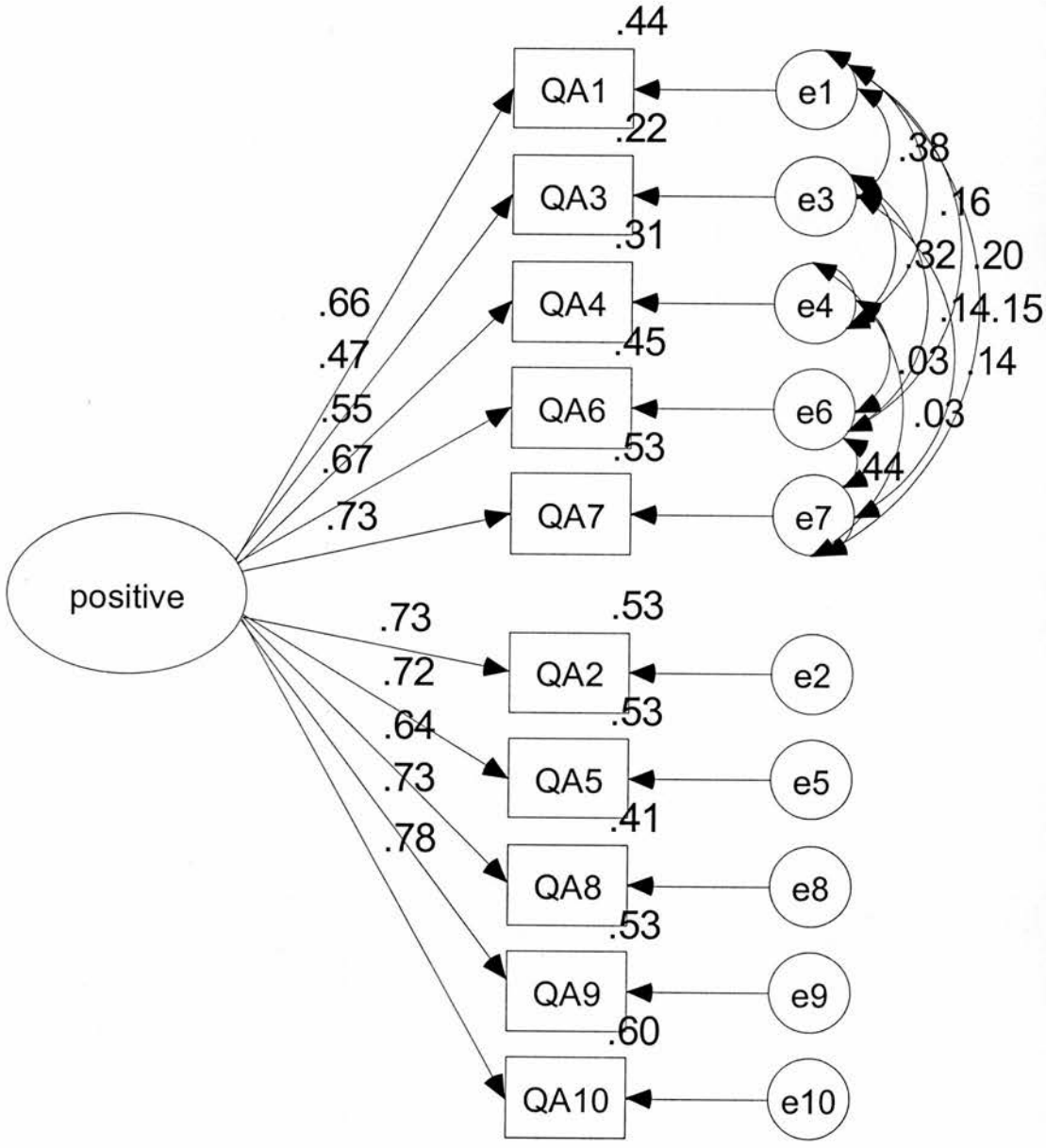


FIGURE 5.9 Self-esteem model G

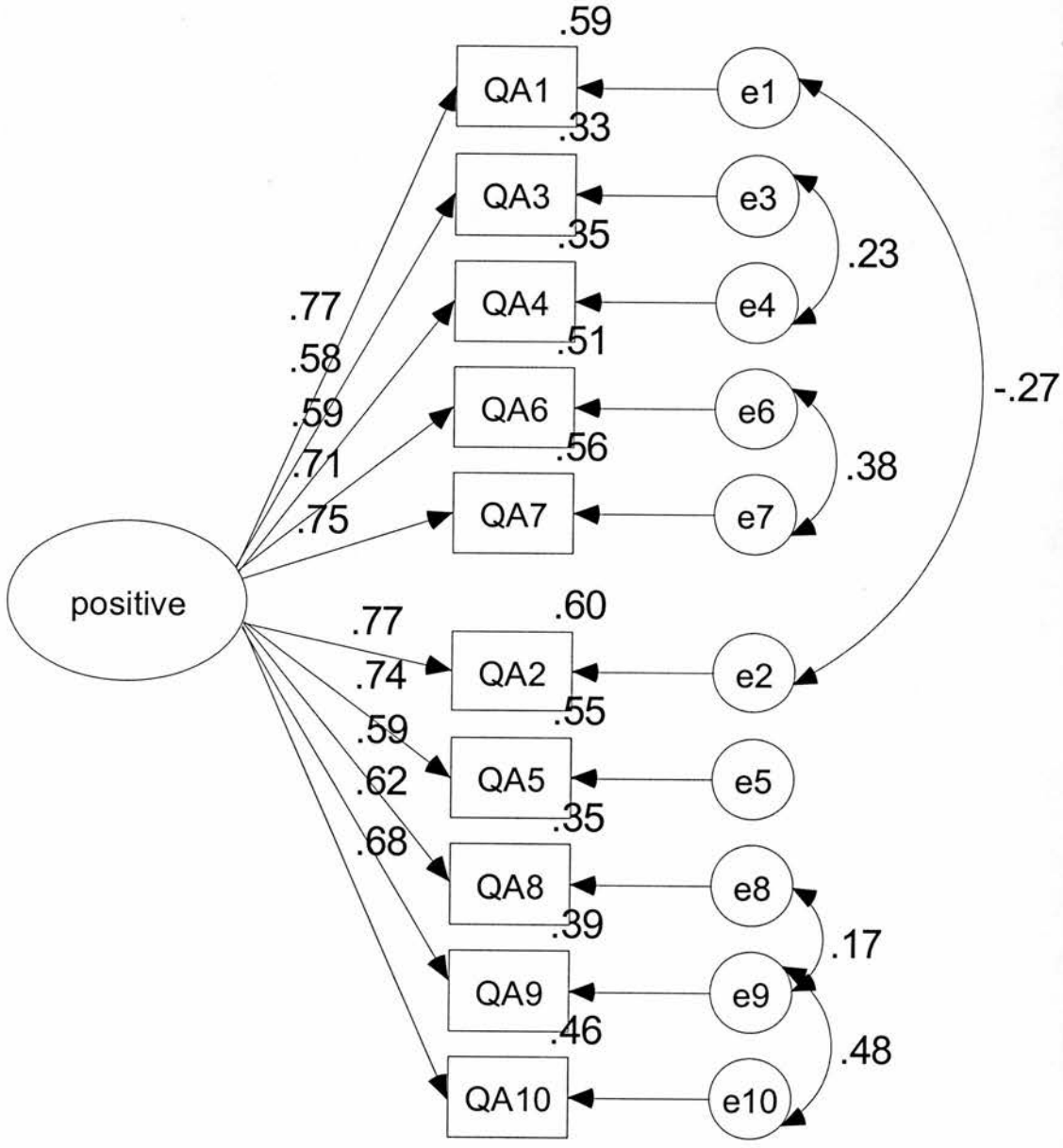


FIGURE 5.10 Self-esteem model H

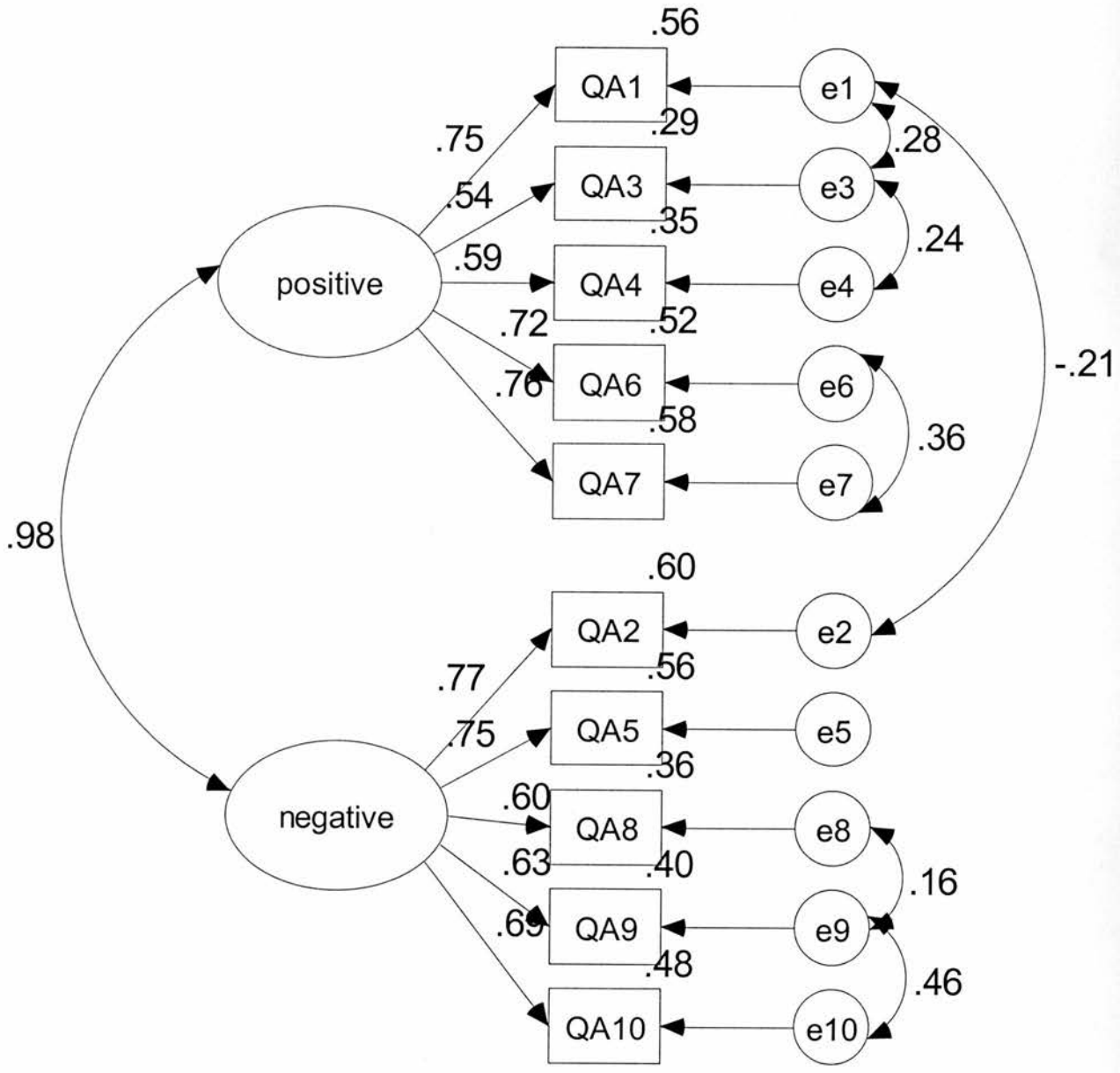


FIGURE 5.11 Self-esteem model I

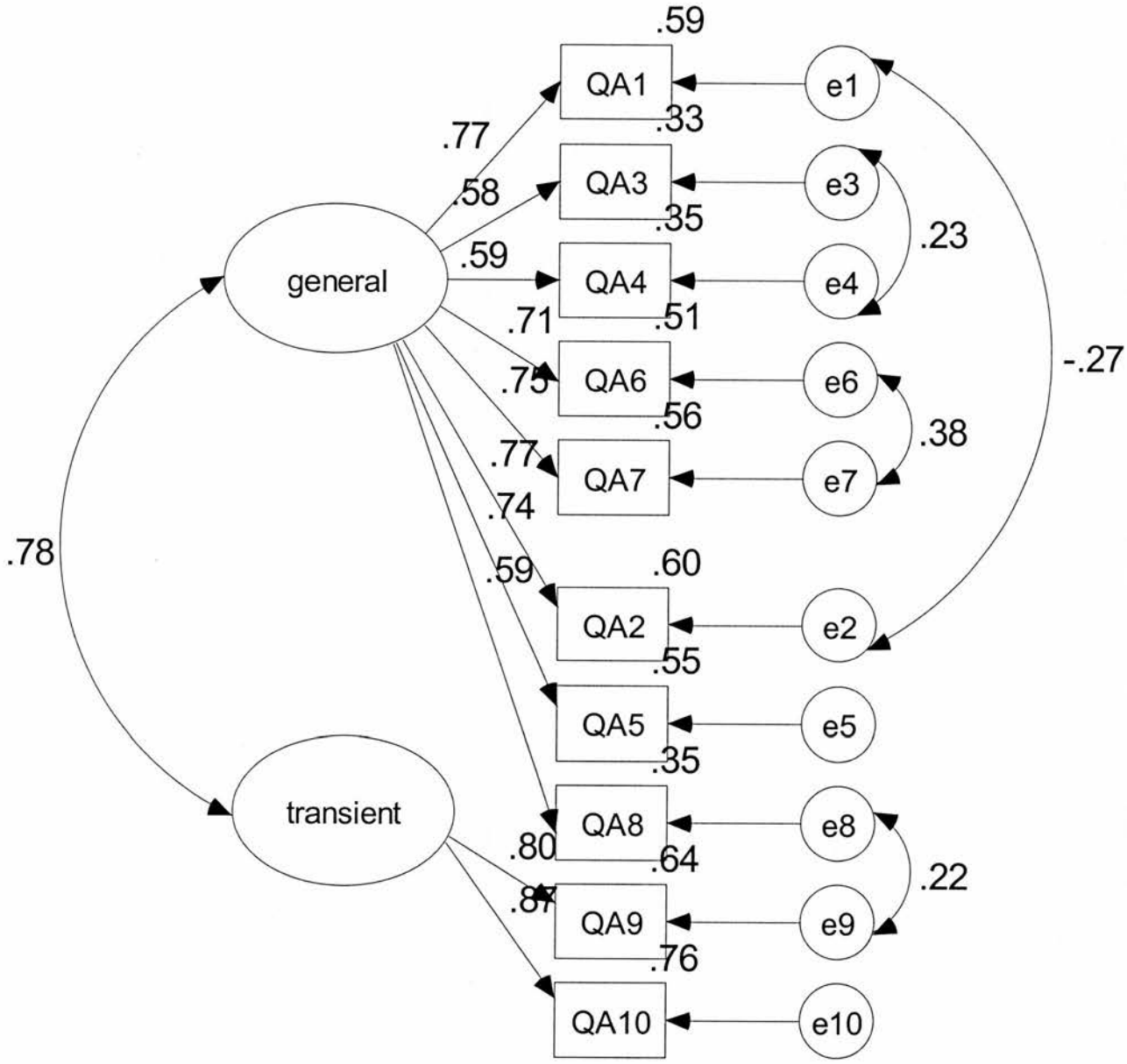
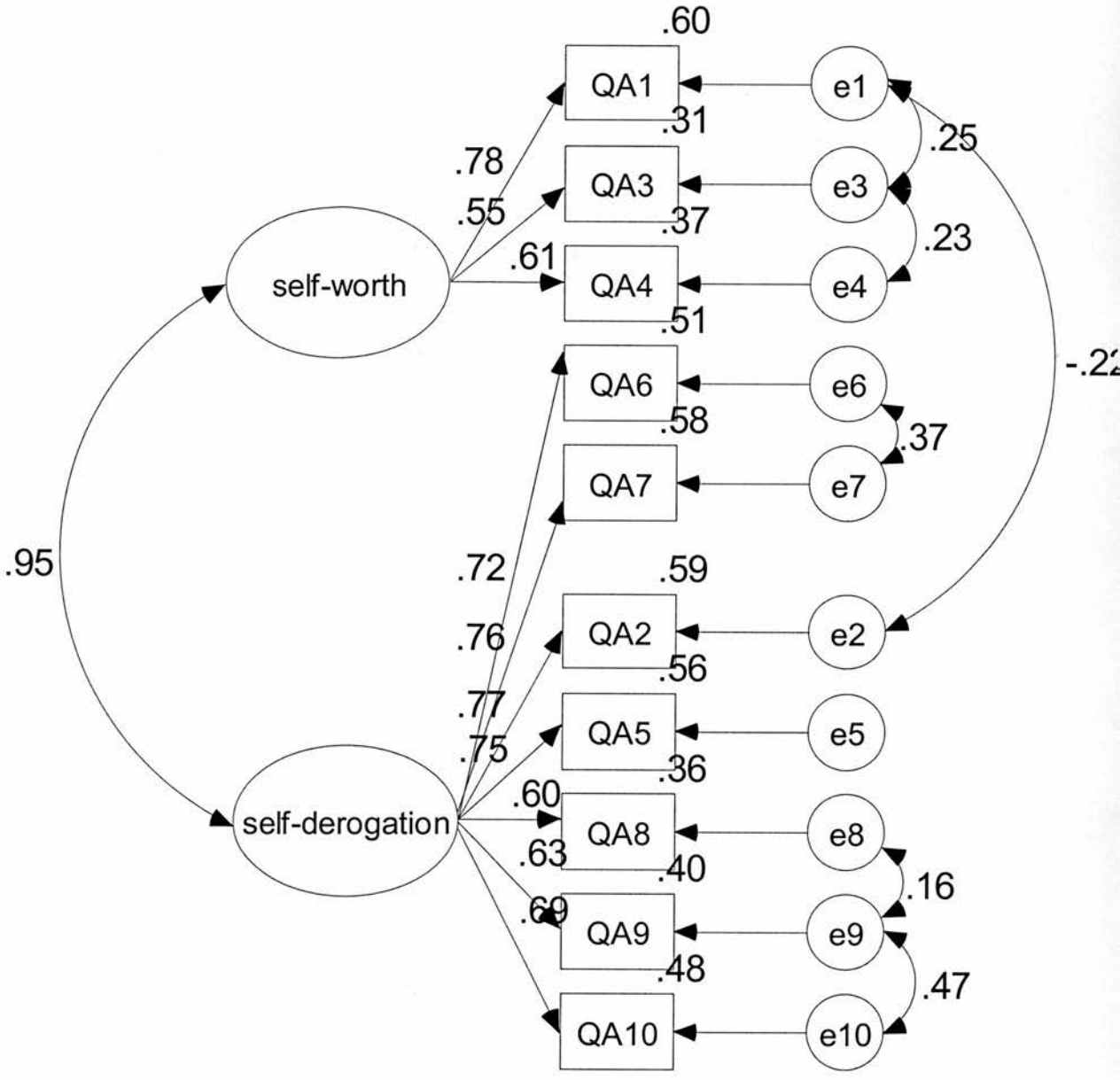


FIGURE 5.12 Self-esteem model J



## 5.4 DISCUSSION

Preliminary analysis of the Rosenberg Self-Esteem Scale supported Schmitt and Stults' (1985) cautionary remarks regarding careless responding, whereby individuals having decided on the response direction stick to this regardless of reversals. However, even once the outstanding careless responses had been identified there was still evidence of measurement error. The results suggested that the pattern of response error is more complex than individuals just scoring in one direction. Examination of endorsement patterns showed responses were often influenced by the direction of preceding groups of items, rather than the overall response direction.

The findings raise the question whether the conclusion of previous studies, that the negative and positive factors are reflections of measurement error, is premature (e.g. Marsh, 1996). Certainly, the confirmatory analysis indicated that two-factor models initially showed better fit, but when error due to response direction was taken into account a one-dimensional construct representing global self-esteem is a better model. However, when error due to paired items were incorporated into the different models there is little to choose between one or two factor models. This suggests that the negative and positive items may also be reflecting different, if very closely related, facets of self-esteem.

The results also suggest that the difference score between the negative and positive items was meaningful. Thus, the achievement sub-scale was a significant predictor of the difference score, and since higher achievement scores were associated with greater differences between the scales, this relationship appeared unconnected with simple measurement error. However, it is unclear how best to conceptualise the two facets of global self-esteem. It can be argued that, both facets reflect global self-rating, but that the negative scale has an additional element of self-directed criticism. Thus, increased difference scores reflected increased negative, but not positive, scores. In addition, the difference score was uniquely predicted by achievement and that this relationship

remained when controlling for overall self-esteem raises the interesting possibility that the difference score reflects frustration intolerance rather than ego disturbance. This interpretation is supported by the results of the multiple regression analysis indicating that achievement frustration was not a significant predictor of self-esteem. Thus, whilst both self-esteem sub-scales involve conditional global judgements the personal criticism element may reflect intolerance of specific behaviours or traits. It is, in other words, what DiGiuseppe (1996) has described as a mismatch between wants and reality, with an individual intolerant of failing but not rating themselves as a global failure regarding this. Personal criticism may therefore represent demands to perform better, rather than a belief in personal inferiority. Overall, this points to the need for a more detailed analysis of the types of belief that constitutes ego disturbance to differentiate these beliefs from frustration intolerance (Neenan & Dryden, 1999).

As expected, there was a significant relationship between frustration intolerance and self-esteem. However, the correlation of Frustration-Discomfort sub-scales with self-esteem was substantially lower than between these sub-scales and overall frustration intolerance. There was also substantial variation between sub-scales. It was expected that comfort and emotional discomfort would be most closely associated with emotional distress and therefore would have the highest correlation with self-esteem. Achievement, like the entitlement sub-scale, was not significantly associated with the positive self-esteem, but was correlated to the negative scale. This is again consistent with the negative scale reflecting frustration intolerance in terms of personal criticism, and with high achievement or entitlement scores being unrelated to self-acceptance but associated with performance demands. It has been suggested that the DAS achievement and entitlement sub-scales may be associated with high self-esteem and that narcissistic individuals are more likely to score high on these scales (Beck et al., 1990). Likewise, Schmidt et al. (1995) describe their unrelenting standards scale as representing 'individuals who place themselves before others and are only satisfied when they are "number one." DiGiuseppe et al. (1995) note that individuals classed as compensating narcissists in their research scored highest on achievement irrational beliefs, and

compared to the other narcissist clusters also scored highest on frustration intolerance beliefs. However, the present results did support the hypothesis that individuals with high achievement and entitlement scores had higher levels of self-esteem. Even for the top 10% of entitlement and achievement scores the mean self-esteem scores represented a low average relative to the general population.

This was supported further by the finding that anger, which has a low relationship with self-esteem, was the only emotion significantly related to the difference score. Whilst anxiety and depression, which do correlate with overall levels of self-esteem, were unrelated to the difference score. This is consistent with the results of Fairbrother and Moretti (1998) who, in their investigation of self-discrepancy and the autonomy-sociotropy dimension, found that the actual-ideal but not the actual-ought discrepancy was significantly related to depression. Similarly, Flett, Hewitt, and Mittelstaedt (1991), using the 'Attitudes Towards the Self Scale', found that global ratings of the self were associated with depression but that the sub-scale measuring self-criticism was not. The present results found no significant relationship between anger and positive self-esteem, but one between anger and negative self-esteem. This suggests that angry individuals indulge in personal criticism but that low self-acceptance is at best only weakly associated with anger. Thus, the theory that anger is related to either a defence of high self-esteem or low self-esteem is not supported by these results. Rather the primary relationship of anger seems to be with frustration intolerance, and this relationship and that of other emotions will be examined in the following chapter.

# CHAPTER SIX

# RELATIONSHIP OF FRUSTRATION INTOLERANCE WITH EMOTIONAL DISTURBANCE

## 6.1 INTRODUCTION

This chapter explores the relationship between the Frustration-Discomfort Scale and measures of emotional disturbance. In this regard, it was important to determine not only whether irrational beliefs are correlated with emotional distress, but whether specific beliefs are associated with particular disorders, and if this association is separate from that with general negative affectivity (Kendall et al., 1995). Similarly, it is important to discriminate between the two categories of belief in their relationship to disturbance, and to show these represent distinct belief processes. Convergent validity is investigated by comparing the Frustration-Discomfort Scale with other measures of similar dysfunctional beliefs, and likewise discriminative validity by comparison of the student and clinical groups.

## 6.2 ANGER

Historically, anger has been closely associated with the concept of frustration intolerance. Oatley and Johnson-Laird (1987) have theorised that the basic emotions are linked with goals and plans, with anger specially deriving from goal frustration. Based on REBT theory, Dryden (1990) suggests three categories of irrational beliefs are associated with anger: the violation of personal rules, frustration of personal goals and threats to self-worth.

Clearly, the entitlement sub-scale includes many of the beliefs involving violation of personal rules that have often been associated with anger, such as unfairness, self-

righteousness, unjust treatment, and the frustration of gratification (DiGiuseppe et al., 1994). However, entitlement has often been assumed to deriving from narcissistic high self-worth and grandiosity (e.g. Raskin. Novacek, & Hogan, 1991). Likewise, the association between goal achievement frustration and anger has been described in a number of theoretical approaches. In particular, the Type-A behaviour pattern links competitive achievement orientation with anger and hostility (Friedmann & Rosenman, 1974). Hart et al. (1991), using a scale developed to measure irrational beliefs related to Type-A behaviour (Thurman, 1985), found these beliefs moderated stressful events in relation to Trait Anger but not Trait Anxiety. It has been suggested that anger is the most important component in predicting cardiac disease. Thus, Birks and Roger (2000) distinguished between 'toxic' and 'non-toxic' patterns, with both components involving achievement orientation but dysfunctional behaviour also reflecting competitiveness and impatience. This has parallels with research examining the construct of perfectionism, in which a similar distinction has been made between positive striving and negative perfectionism (for review see Enns & Cox, 2002).

Several theorists have proposed that the essential distinction between functional and dysfunctional achievement orientation is that of self-esteem. Stumpf and Parker (2000) suggest that dysfunctional perfectionism is largely mediated by self-esteem and associated with the trait of neuroticism, whereas functional perfectionism is associated with Conscientiousness. Likewise, it has been proposed that maladaptive Type-A behaviour is a function of low self-esteem (Kuiper & Martin, 1989; Birks & Roger, 2000). However, it can be argued that measures of perfectionism have not clearly distinguished between self-worth and frustration intolerance beliefs. That is, whilst self-esteem items are worded in terms of this dimension those items describing high standards are phrased in more positive terms. REBT would argue that dysfunctional beliefs are characterised by the presence of either demandingness or low self-acceptance, and demandingness has not been used consistently in the wording of these 'functional' items. Therefore, it is unclear whether beliefs relating to high standards would be associated with anger and other problems if worded to reflect irrational

demands. It would be hypothesised that such beliefs would represent frustration intolerance rather than self-worth. There is some evidence that demandingness in addition to self-esteem is also implicated in dysfunctional perfectionism. For example, Rice and Mirzadeh (2000) found that dysfunctional perfectionists were more critical and demanding of their parents. Further, research suggests that both 'high standard' and 'self-worth' perfectionism may be involved in Type-A behaviour (Flett et al.,1994).

REBT proposes that anger can be related to both self-worth and frustration intolerance beliefs, with low self-acceptance associated with ego-defensive anger (Dryden, 1990). However, there is little empirical evidence regarding the relative contributions of self-worth and frustration intolerance beliefs to anger. Indeed, although low self-esteem has often suggested as playing an important role in anger (e.g., Beck, 1999) the evidence for this relationship is sparse (DiGiuseppe, 1999). On the contrary, Baumeister, Smart, and Boden (1996) have found no significant relationship between anger and positive self-acceptance, although there was a low but significant relationship between anger and negative self-condemnation. However, it was argued in the previous chapter that some types of self-criticism might reflect punitiveness associated with personal frustration rather than low self-acceptance. If so, the relationship between anger and self-worth may be even weaker compared to the contribution of frustration intolerance.

## 6.3 DEPRESSION AND ANXIETY

Several theoretical approaches have proposed that depression can be divided into two sub-types depending on underlying beliefs. Beck (1976) from the Cognitive Therapy approach has distinguished between social approval and achievement orientation. From a psychoanalytic perspective, Blatt (1995) describes the self-critical and dependent types. However, each of these types of depression involves threats to self-worth, differing only in its focus. In contrast, REBT argues that depression may be best categorised in terms of self-worth as opposed to frustration intolerance beliefs. That is ego depression and discomfort depression, with the latter referring to a loss of 'personal

comfort' rather than self-esteem (Dryden & Neenan, 1995). Thus, Hauck (1974) describes depression being associated with self-blame, self-pity, and other-pity. The last two are related to frustration intolerance beliefs that problems in life are unbearably hard, difficult, unfair and happen to those who don't deserve it. Secondary depression (depressed about being depressed) can also reflect frustration intolerance beliefs, with the aversiveness of the depressive symptoms generating further depression (Teasdale & Barnard, 1993).

Perfectionist achievement beliefs have also been shown to play a role in depression (Hewitt & Flett, 1991). Several studies show that 'maladaptive evaluative' sub-scales of the Frost scale, concern over mistakes and doubts, showed the strongest association with depression. however, the 'adaptive' sub-scales showed a small or negative relationship with depression (e.g. frost et al., 1993). Similarly, both concern over mistakes and Hewitt and Flett's socially prescribed perfectionism show moderate correlations with depression once neuroticism/extraversion were controlled, as did (Enns & Cox, 1999). However, personal standards and self-orientated perfectionism had a negligible relationship with depressed mood. Kawamura, et al. (2001) found that the 'adaptive' sub-scales were negatively related to depression when controlling for anxiety. However, when depression was controlled the 'maladaptive' sub-scales were significantly related to higher anxiety.

There has been little exploration of the relationship between depression and 'impulsivity' (Farmer, 1998), with many of the earlier REBT studies investigating depression suffering from the limitations discussed earlier: Inadequate measures examining general levels of irrationality rather than specific belief categories. However, Mcdermut, Haaga, and Bilek (1997) using the Belief Scale (Malouff and Schutte, 1986) found that irrational beliefs were higher in a depressed compared to non-depressed group when controlling for negative affect. Furthermore, six items were significantly associated with depression. Three of these items were related to frustration intolerance: ' life should be easier than it is', 'many events from my past so strongly influence me that

it is impossible to change', and 'things should turn out better than they usually do'. Two other beliefs were related to self-esteem and achievement.

Specific belief categories regarding anxiety were also investigated by Deffenbacher et al. (1986) using the Irrational Belief Test (Jones, 1969). They found that anxious overconcern, problem avoidance, catastrophising, and the personal perfection sub-scales all predicted trait anxiety. Furthermore, different types of anxiety had different patterns of irrational belief. However, the conclusions from this study are limited by weaknesses with the Jones test. Burgess (1990) also found that agoraphobic sufferers had higher levels of beliefs regarding 'comfort' but not beliefs regarding 'approval', when compared to generalised anxiety and normal controls. This also suggests that certain types of anxiety might be associated with different aspects of frustration intolerance. For instance, Dugas et al. (1998) found that intolerance of uncertainty was the most important belief in discriminating GAD from a non-clinical group. Likewise, PTSD has been characterised by anger and the avoidance of emotional distress, with both aspects implicated in reduced treatment effectiveness (Foa et al., 1995). Ellis (1994c) has suggested that intolerance of the symptoms is an important feature of PTSD, along with beliefs regarding fairness and justice. The co-morbidity between PTSD, and other anxiety disorders, with alcohol abuse has also been related to the avoidance of negative affect (Cox et al., 1990).

One methodological difficulty is that self-report measures of anxiety and depression show considerable overlap. This has led some researchers to argue that this reflects shared variance in the form of a non-specific general factor of distress, termed negative affect by Clark and Watson (1991). Nevertheless, they suggest that the two concepts may be distinguished, with anxiety characterised by symptoms of somatic arousal and depression by symptoms of anhedonia. In order to examine the unique contribution of frustration intolerance to these emotions a regression strategy was used controlling for negative affect using the alternative emotion as a covariable. The HAD scale was useful in this respect since it focuses on anhedonic depressive and somatic anxiety symptoms.

Similarly, because of the expected interrelationship between self-esteem and frustration intolerance, self-esteem was controlled to determine the independent contribution of these concepts.

## 6.4 METHOD

Participants and procedure were described previously. The measures of emotional disturbance, and the self-esteem scale were given only to the clinical group, and therefore no comparisons with the student group were made on these measures.

## 6.5 RESULTS

## 6.6 ANGER

### 6.6.1 PRELIMINARY DATA ANALYSIS

There were no missing data. The Trait Anger Scale (Spielberger et al., 1983) standard scores were examined to identify univariate outliers. There were five cases with standard scores between ± 2.5 and 3, but no cases above ± 3 which guidelines suggest is the cut-point for classification as outliers (Hair et al., 1998). Examination of bivariate plots and residuals plots indicated that the relationships were linear, and multivariate assumptions were met. The scale was positively skewed ($Z = 4.71$). This is consistent with published norms, and the manual notes that whilst this makes the scale relatively insensitive with low anger scores, it is not a problem when considering high levels of anger when raw scores can be used without transformation.

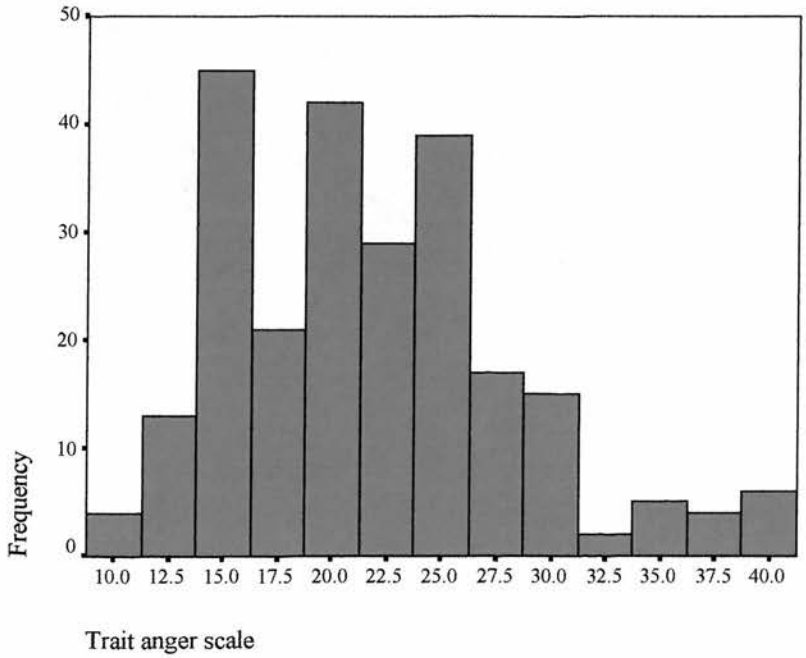
## 6.6.2 DESCRIPTIVE AND CORRELATIONAL ANALYSIS

There was a low, but significant relationship between anger and age ($r(240) = -.15$, $p < .05$). There was no significant difference between the means for men and women ($t(240) = 1.08$, ns). Using the manual recommended cut-points, 58% of males and 49% of females were classified as having clinical levels of anger (table 6.1). The distribution of Trait anger scores are displayed in figure 6.1.

Table 6.1 Descriptive Statistics: Trait anger scores

| | N | Mean | SD |
|---|---|---|---|
| Full sample | 242 | 21.83 | 6.52 |
| Male | 95 | 22.41 | 7.11 |
| Female | 147 | 21.46 | 6.10 |

Figure 6.1 Distribution of Trait anger scores



The means and standard deviations of the angry and non-angry groups are shown in table 6.2. All sub-scales of the Frustration-Discomfort Scale were higher in the angry group. Self-esteem was also significantly lower in the angry group.

Table 6.2 Mean and standard deviations for angry and non-angry groups

| Belief scale | Non-angry | Angry | t |
|---|---|---|---|
| N | 115 | 127 | |
| Frustration-Discomfort | 83.1 (30.0) | 106.1 (34.8) | 5.48*** |
| Emotional discomfort | 28.6 (11.5) | 32.9 (12.4) | 2.80** |
| Entitlement | 19.7 (8.9) | 29.8 (10.2) | 8.15*** |
| Comfort | 19.7 (10.6) | 24.8 (11.7) | 3.48*** |
| Achievement | 15.1 (7.1) | 18.6 (6.6) | 4.06*** |
| Self-esteem total score | 24.2 (5.8) | 22.7 (5.6) | 1.98* |

***p < .001, **p < .01, *p < .05

Correlations were calculated between the Frustration-Discomfort sub-scales and the Trait Anger Scale. The findings reveal that all sub-scales are highly significant but, as predicted, entitlement was most associated with trait anger (table 6.3). Contrary to predictions, achievement had only a low relationship with anger, similar to comfort and emotional discomfort.

Table 6.3 Correlations between Trait anger and Frustration-Discomfort

| | Trait Anger Scale |
|---|---|
| Frustration-Discomfort Scale | .42*** |
| Emotional discomfort | .28*** |
| Entitlement | .55*** |
| Comfort | .27*** |
| Achievement | .28*** |

N = 242 ***p < .001

Since self-esteem overlaps with frustration intolerance, partial and zero order correlations were calculated to examine the amount of variance contributed by each variable in relation to anger. The zero order correlations between anger and self-esteem are shown in table 6.4. As can be seen, the negative self-esteem scale was related to the degree of trait anger. It has been argued in the previous study that the negative scale might additionally reflect frustration intolerant criticism. The positive scale did not correlate with the trait anger score and the entitlement and achievement scales were significantly correlated with the negative but not positive scales.

Table 6.4 Zero-order correlations between Trait anger, Frustration-Discomfort and self-esteem

| | Total self-esteem | Positive self-esteem | Negative self-esteem |
|---|---|---|---|
| Trait anger scale | -.17* | -.11 | -.19** |
| Emotional discomfort | -.44*** | -.36*** | -.45*** |
| Entitlement | -.16* | -.09 | -.20** |
| Comfort | -.36*** | -.31*** | -.35*** |
| Achievement | -.17* | -.06 | -.24*** |

N = 232 ***p < .001, **p < .01, *p < .05

When partial correlations were calculated, controlling for total self-esteem score, all Frustration-Discomfort sub-scales remained significant (table 6.5). On the other hand, when controlling for Frustration-Discomfort, the self-esteem scales had little relationship with anger (table 6.6). The same loss of significance was found when controlling for each Frustration-Discomfort sub-scale separately. This indicates that there is no association between self-esteem and anger once frustration intolerance is taken into account.

Table 6.5 Partial correlations between Trait anger and Frustration-Discomfort, controlling for total self-esteem scores

| | Trait anger scale |
|---|---|
| Full scale | .40*** |
| Emotional discomfort | .24*** |
| Entitlement | .53*** |
| Comfort | .23*** |
| Achievement | .30*** |

N = 229 ***p < .001

Table 6.6 Partial correlations between Trait anger and self-esteem scales, controlling for total Frustration-Discomfort score.

| | Trait anger scale |
|---|---|
| Total self-esteem | -.02 |
| Positive scale | .01 |
| Negative scale | -.03 |

N = 229

### 6.6.3 REGRESSION ANALYSIS

A simultaneous multiple regression analysis was conducted to determine which sub-scales were the unique predictors of anger. In the first analysis all the sub-scales were entered as a block with Trait anger scores as the criterion. The regression model was highly significant, indicating that frustration intolerance accounts for 31% of the variance in Trait anger scores. However, examination of the individual sub-scales showed that once shared variance had been accounted for only entitlement remained a significant predictor (table 6.7).

To determine the proportion of variance accounted for by entitlement compared to the other sub-scales a hierarchical analysis was carried out, in which entitlement was entered on step 1 followed by the other sub-scales. Entitlement accounted for 30% of the variance in anger scores (Multiple R (1,240) = .55, $R^2_{cha}$ = .30, $F_{cha}$ = 102.38, p < .001).

There was very little change in $R^2$ with the addition of the other sub-scales, and the percentage of variance explained increased by a negligible 1% ($R^2_{cha}$ (3,237) = .01, $F_{cha}$ = 1.50, ns). These results indicate that, when levels of entitlement are controlled for, the other sub-scales do not have any significant relationship with anger. Examination individual items indicated that, of the thirteen items significantly discriminating between angry and depressed groups, all were included in the entitlement sub-scale.

Table 6.7 Multiple regression analysis: Frustration-Discomfort sub-scales predicting Trait anger

| Variables Entered | t | p | Beta |
|---|---|---|---|
| Emotional discomfort | 0.17 | .862 | -.02 |
| Entitlement | 8.29 | .000 | .66 |
| Comfort | 1.66 | .099 | -.13 |
| Achievement | 0.57 | .573 | -.04 |

Multiple R = .56
$R_2$ = .31
Adjusted $R_2$ = .30

F (4, 237) = 26.88, p < .001

## 6.6.4 RELATIONSHIP BETWEEN ANGER AND DIFFERENCE SCORE

It had been hypothesised in the previous chapter that the self-esteem difference score reflected frustration-intolerance beliefs primarily involving the achievement and entitlement with which it was significantly correlated (table 6.8).

Table 6.8 Correlations between the difference score, mediating and criterion variables

| Scale | Difference score | Trait anger | Achievement |
|---|---|---|---|
| Trait anger | -0.14* | | |
| Achievement | -0.28*** | 0.28*** | |
| Entitlement | -0.17** | 0.55*** | 0.58*** |

N = 232 ***p < .001, **p < .01, *p < .05

This was tested in a series of hierarchical regression analysis (table 6.9). In the first analysis, positive self-esteem was entered on step 1 and the difference scale on step 2. On the second analysis, achievement was entered on step 1. On the third analysis, achievement, positive self-esteem, and the difference score were entered sequentially. Both positive self-esteem and the difference score accounted for relatively small amounts of variance, but both remained significant predictors of anger. However, when achievement frustration was entered the relationship between the difference score and anger no longer significant, with achievement accounting for 10% of the variance. Finally, when achievement was entered first, both the positive self-esteem score and the difference score failed to remain predictors. This indicates that the relationship between the difference score, positive self-esteem, and anger is explained by their relationship with achievement frustration. The difference score was related to anger independently from global ratings of self-worth.

Table 6.9 Hierarchical multiple regression analyses: Difference score, with positive self-esteem and achievement sub-scale, predicting Trait anger

| Variables entered<br>*Criterion:* Trait anger | R | $R^2$ | $R^2$ cha | F cha |
|---|---|---|---|---|
| Regression 1 | | | | |
| Positive self-esteem | .13 | .02 | .02 | 4.04* |
| Difference score | .21 | .04 | .03 | 6.32** |
| Regression 2 | | | | |
| Achievement | .32 | .10 | .10 | 26.66*** |
| Difference score | .33 | .11 | .01 | 0.63 |
| Regression 3 | | | | |
| Achievement | .32 | .10 | .10 | 26.66*** |
| Positive self-esteem | .34 | .12 | .01 | 3.04 |
| Difference score | .35 | .12 | .01 | 1.41 |

## 6.7 RELATIONSHIP OF FRUSTRATION INTOLERANCE WITH DEPRESSION AND ANXIETY

### 6.7.1 PRELIMINARY DATA ANALYSIS

There were two missing cases from the HAD anxiety scale and three from the depression scale, representing 1.3% of the data. The anxiety scores were converted to standard scores to enable identification of univariate outliers. Only two cases had standard scores between ± 2.5 and 3, and no cases were above ± 3. Likewise, on the depression scale there was one case with a standard score between ± 2.5 and 3, and no cases above ± 3. Thus, there were no outliers with $p < .001$. The Kolmogorov-Smirnov test was significant for both the anxiety ($p < .001$), and depression ($p < .05$), sub-scales, although the kurtosis and skewness statistics were both non-significant at the $p < .001$ level. This indicates that the distribution is acceptable, and indeed visual inspection of the distributions did not suggest marked deviation from normality and no transformations were deemed necessary (figures 6.2 and 6.3). Means and standard deviations are presented in table 6.10.

Table 6.10 Descriptive statistics: HAD scales

| | Mean | SD |
|---|---|---|
| Full HAD scale | 22.41 | 7.42 |
| HAD-Anxiety | 13.55 | 4.12 |
| HAD-Depression | 9.02 | 4.47 |

### 6.7.2 DESCRIPTIVE AND CORRELATIONAL ANALYSIS

Using the suggested cut-point of 11 or more for each sub-scale to obtain the best separation of cases from non-cases, 77% of the sample suffered anxiety problems and 35% suffered from depression. there was a substantial overlap between emotion categories, with 31% classified as both anxious and depressed, 19% angry and depressed, and 18% as having all three problems. The correlation between the HAD-A

scale and HAD-D scale was r (239) = .51, p < .001. There was no significant gender difference between the scales.

Figure 6.2 Distribution of HAD anxiety scores

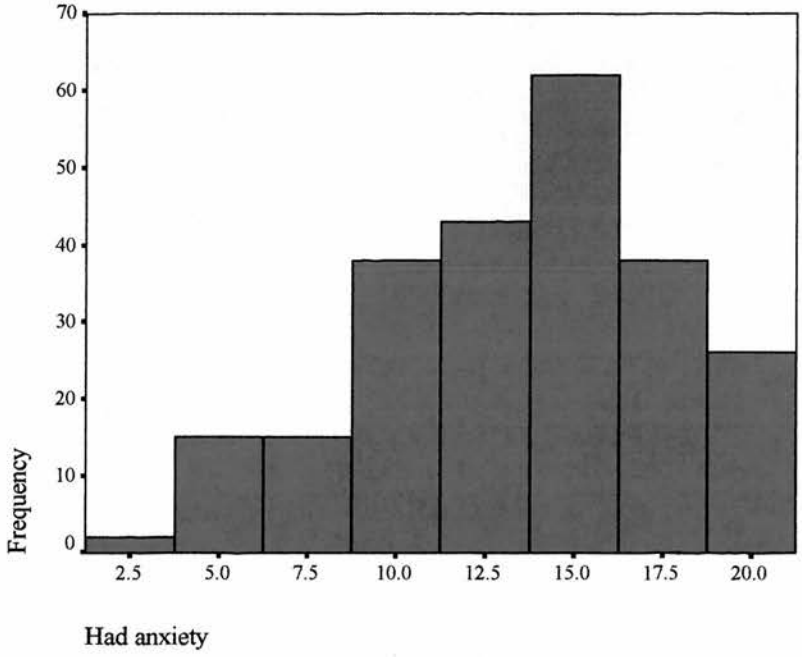
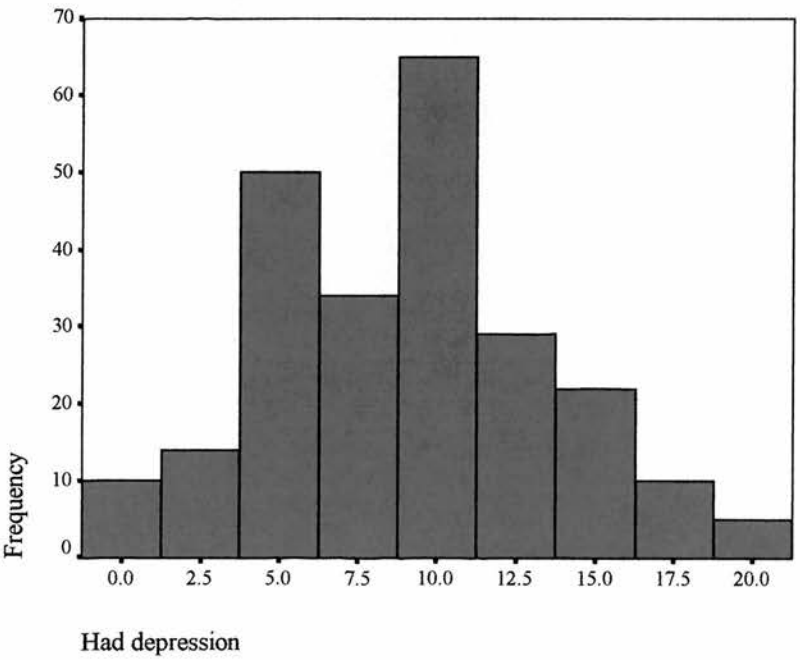



Table 6.3 Distribution of HAD depression scores



Correlations between the Frustration-Discomfort Scale and the HAD scale are presented in table 6.11. As expected there were significant positive correlations between total frustration intolerance and these measures of emotional disturbance. In terms of the separate sub-scales, only entitlement was not significant related with depression, with emotional discomfort and comfort had the strongest association.

Table 6.11 Correlations between the Frustration-Discomfort Scale and HAD scale

| Frustration-Discomfort Scale | HAD total | HAD-A | HAD-D |
|---|---|---|---|
| Full scale | .43*** | .46*** | .30*** |
| Emotional discomfort | .47*** | .49*** | .32*** |
| Entitlement | .21** | .26*** | .10 |
| Comfort | .43*** | .41*** | .34*** |
| Achievement | .29*** | .31*** | .19** |

N = 237 ***p < .001, **p < .01, *p < .05

## 6.8 ANXIETY

### 6.8.1 DISCRIMINATIVE ANALYSIS

The means and standard deviations between anxious and non-anxious patients are shown in table 6.12. Mean scores for all the Frustration-Discomfort sub-scales and the Rosenberg Self-Esteem Scale were significantly different between the two groups. Levene's test indicated that the variances for the comfort scale were unequal. However, comparison with the results of the Mann-Whitney test showed equivalent levels of significance to independent t-tests.

Table 6.12 Mean and standard deviations for anxious and non-anxious groups

| Belief scale | Non-anxious | Anxious | t |
|---|---|---|---|
| Overall N | 56 | 184 | |
| Frustration-Discomfort | 74.9 (32.0) | 101.4 (33.0) | 5.29*** |
| Emotional discomfort | 23.4 (12.4) | 33.2 (11.2) | 5.61*** |
| Self-entitlement | 21.4 (9.8) | 26.1 (11.0) | 2.86** |
| Comfort | 16.2 (9.6) | 24.3 (11.5) | 5.34*** |
| Achievement | 14.0 (7.2) | 17.8 (6.8) | 3.66*** |
| Self-esteem full scale | 26.6 (5.9) | 22.3 (5.3) | 5.16*** |

***p < .001, **p < .01, *p < .05

### 6.8.2 REGRESSION ANALYSIS

Simultaneous multiple regression, in which all Frustration-Discomfort sub-scales were entered as a block, showed that all the sub-scales were significant predictors of anxiety, explaining 28% of the variance (table 6.13).

Table 6.13 Multiple regression: Frustration-Discomfort predicting anxiety

| Variables Entered | t | p | Beta |
|---|---|---|---|
| Emotional discomfort | 5.23 | .000 | .41 |
| Entitlement | 2.55 | .011 | -.21 |
| Comfort | 2.72 | .007 | .22 |
| Achievement | 2.08 | .038 | .15 |

Multiple R = .53
$R^2$ = .28
Adjusted $R^2$ = .27
F (4, 235) = 22.99, p < .001

To examine the contribution of Frustration intolerance after controlling for shared variance with self-esteem and depression a series of hierarchical regression analyses were conducted. In the first analysis, to control for the influence of negative affect, the

HAD-D scale was entered on step 1 and the Frustration-Discomfort sub-scales on step 2 (table 6.14). Results indicated that when general negative affect was controlled the frustration intolerance block still explained a significant proportion of the remaining variance in anxiety scores, accounting for an additional unique variance of 13%. However, only emotional discomfort remained a significant predictor of anxiety.

Table 6.14 Hierarchical multiple regression: Frustration-Discomfort predicting anxiety, controlling for depression

| Variables entered | t | p | Beta |
|---|---|---|---|
| *Criterion: Anxiety* | | | |
| Step1 | | | |
| Depression | 9.21 | .000 | .51 |
| Step2 | | | |
| Emotional discomfort | 4.31 | .000 | .31 |
| Entitlement | 1.06 | .290 | -.08 |
| Comfort | 1.15 | .251 | .09 |
| Achievement | 1.55 | .123 | .10 |

Step 1: Multiple R = .51, $R^2$ = .26, $F_{cha}$ (1,237) = 84.75***
Step 2: Multiple R = .62, $R^2_{cha}$ = .13, $F_{cha}$ (4,233) = 12.05***

The contribution of frustration intolerance controlling for self-esteem, was investigated next (table 6.15). Total self-esteem score was entered on step 1 and the Frustration-Discomfort sub-scales on step2. Self-esteem was a significant predictor at step 1 and Frustration-Discomfort remained significant at step 2, explaining an additional 16% of additional variance. Entitlement was a significant negative predictor of anxiety. When entered separately, the other three sub-scales only contribute 3% of variance compared to 14% from emotional discomfort.

Table 6.15 Hierarchical multiple regression: Frustration-Discomfort predicting anxiety, controlling for self-esteem

| Variables entered | t | p | Beta |
|---|---|---|---|
| *Criterion: Anxiety* | | | |
| Step1 | | | |
| Self-esteem | 6.99 | .000 | .42 |
| Step2 | | | |
| Emotional discomfort | 4.13 | .000 | .33 |
| Entitlement | 2.01 | .041 | -.17 |
| Comfort | 2.19 | .032 | .18 |
| Achievement | 2.23 | .024 | .16 |

Step 1: Multiple R = .42, $R^2$ = .18, $F_{cha}$ (1,228) = 48.83***
Step 2: Multiple R = .58, $R^2_{cha}$ = .16, $F_{cha}$ (4,224) = 13.97***

Lastly, both negative affect and self-esteem, were controlled for, with HAD-D entered first, followed at step 2 by self-esteem and then on step 3 by the Frustration-Discomfort sub-scales (table 6.16). Depression and self-esteem were significant predictors, with self-esteem explaining an additional 4% of variance. The Frustration-Discomfort sub-scales remained significant, contributing an additional 10 % of variance when self-esteem and general negativity were both taken into account. However, only emotional discomfort remained a significant unique predictor, although achievement frustration approached significance. In comparison, self-esteem when controlling for frustration intolerance accounted for only an additional 4% ($R^2_{cha}$ = .04, $F_{cha}$ (1,224) = 12.31, p = < .001), and a similar amount controlling for negative affect ($R^2_{cha}$ = .04, $F_{cha}$ (1,227) = 12.84, p = < .001). When both variables were controlled self-esteem was no longer a significant predictor of anxiety ($R^2_{cha}$ = .01, $F_{cha}$ (1,223) = 3.05, ns)

Table 6.16 Hierarchical multiple regression: Frustration-Discomfort sub-scales predicting anxiety, controlling for self-esteem and depression

| Variables entered | t | p | Beta |
|---|---|---|---|
| *Criterion: Anxiety* | | | |
| Step1 | | | |
| HAD-D | 9.17 | .000 | .52 |
| Step2 | | | |
| Self-esteem total | 3.58 | .000 | -.23 |
| Step3 | | | |
| Emotional discomfort | 3.81 | .000 | .29 |
| Entitlement | 1.08 | .281 | -.09 |
| Comfort | 1.08 | .280 | .08 |
| Achievement | 1.81 | .072 | .12 |

Step 1: Multiple R = .52, $R^2$ = .27, $F_{cha}$ (1,228) = 84.08***
Step 2: Multiple R = .56, $R^2_{cha}$ = .04, $F_{cha}$ (1,227) = 12.84***
Step 3: Multiple R = .64, $R^2_{cha}$ = .10, $F_{cha}$ (4,223) = 9.59***

Examination of the partial correlation coefficients indicated that all the Frustration-Discomfort scales were significantly associated with anxiety, even when controlling for both negative affect and self-esteem (table 6.17).

Table 6.17 Partial correlations between anxiety and Frustration-Discomfort sub-scales controlling for self-esteem, depression and both variables

| Frustration-Discomfort | Zero-order | Depression | Self-esteem | Depression + Self-esteem |
|---|---|---|---|---|
| Full scale | .47*** | .37*** | .38*** | .34*** |
| Emotional discomfort | .51*** | .41*** | .40*** | .36*** |
| Entitlement | .27*** | .24*** | .22*** | .22*** |
| Comfort | .43*** | .29*** | .33*** | .26*** |
| Achievement | .33*** | .26*** | .29*** | .25*** |

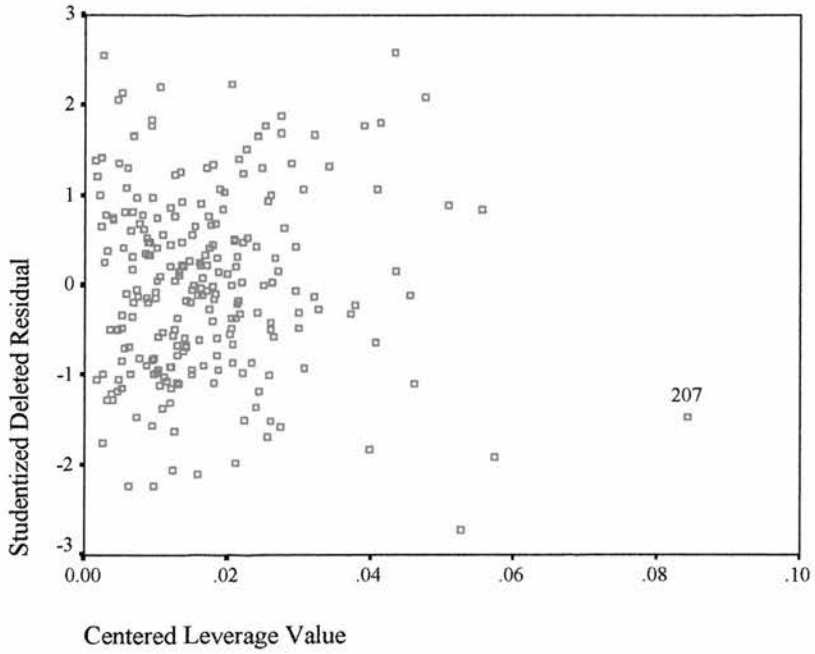
N = 227 ***p < .001

## 6.9 DEPRESSION

### 6.9.1 PRELIMINARY ANALYSIS

The presence of multivariate outliers was assessed using the Mahalanobis measure and other diagnostic statistics. This indicated one case whose score lay a considerable distance from the others, had substantially higher leverage value (figure 6.4) and standardised DFBETA for the achievement scale was above the recommended guidelines (Z = ±2). This case had been excluded from the self-esteem analysis due to careless responding on the Rosenberg scale. The depression score was very low, but in contradiction to this, the background questionnaire indicated the main emotional problem during the previous month was depressed mood. Given this evidence it was thought prudent to run the analyses with and without this case.

Figure 6.4 Plot of Studentised deleted residuals against centered leverage value



## 6.9.2 DESCRIPTIVE AND CORRELATIONAL ANALYSIS

The means and standard deviations between depressed and non-depressed patients are shown in table 6.18. All sub-scales of the Frustration-Discomfort Scale, except entitlement, were significantly higher in the depressed group, as was Self-esteem. Although Levene's test indicated that self-esteem scale variance was unequal, Mann-Whitney tests showed equivalent levels of significance to independent t-tests for all comparisons.

Table 6.18 Mean and standard deviations for depression and non-depressed groups

| Belief scale | Non-Depressed | Depressed | t |
|---|---|---|---|
| Overall N | 156 | 83 | |
| Frustration-Discomfort | 89.3 (35.1) | 105.9 (31.6) | 3.65*** |
| Emotional discomfort | 28.6 (12.5) | 35.1 (10.1) | 4.13*** |
| Entitlement | 24.4 (11.0) | 26.0 (10.5) | 1.06 |
| Comfort | 20.1 (10.7) | 26.6 (11.9) | 4.26*** |
| Achievement | 16.2 (7.2) | 18.3 (6.6) | 2.19* |
| Self-esteem full scale | 24.9 (5.7) | 20.3 (4.5) | 6.66*** |

Comfort and emotional discomfort, and to a lesser extent achievement, were all moderately correlated to depression. Partial correlations indicated that the three sub-scales continued to be significantly related to depression, after controlling for self-esteem. However, with both negative affect and self-esteem controlled, only comfort continued to be significantly related to depression (table 6.19). The removal of the outlier had negligible effects on these results. The equivalent partial correlation analysis for self-esteem is shown in table 7.20. This indicates that the relationship between depressed mood and self-esteem is remains significant after controlling for negative affect and Frustration-Discomfort.

Table 6.19 Partial correlations between depression and Frustration-Discomfort sub-scales controlling for self-esteem and anxiety

| Frustration-Discomfort | Zero-order | Controlling for Anxiety | Self-esteem | Anxiety + Self-esteem |
|---|---|---|---|---|
| Full scale | .33*** | .12 | .20** | .06 |
| Emotional discomfort | .36*** | .13* | .20** | .05 |
| Entitlement | .13 | .02 | .06 | -.03 |
| Comfort | .37*** | .20** | .25*** | .14* |
| Achievement | .20** | .04 | .14* | .03 |

N = 227 ***p < .001, **p < .01, *p < .05

Table 6.20 Partial correlations between depression and Rosenberg Self-Esteem Scale controlling for Frustration-Discomfort and anxiety

| | Zero-order | Anxiety | Frustration-Discomfort | Anxiety + Frustration-Discomfort |
|---|---|---|---|---|
| Rosenberg Self-esteem | -.47*** | -.33*** | -.40*** | -.32*** |

N = 227 ***p < .001, **p < .01, *p < .05

### 6.9.3 REGRESSION ANALYSIS

To further investigate the relationship between depression and frustration intolerance a series of multiple regression analyses were conducted. A simultaneous multiple regression was performed with all Frustration-Discomfort sub-scales entered as a block. The Frustration-Discomfort group significantly predicted depression, explaining 18% of the variance (table 6.21). The achievement sub-scale was not significant. The removal of the outlier was found to have no effect on the overall variance explained or the significance of individual items.

Table 6.21 Multiple regression: Frustration-Discomfort predicting depression

| Variables Entered | t | p | Beta |
|---|---|---|---|
| Emotional discomfort | 2.90 | .004 | .24 |
| Entitlement | 3.78 | .000 | -.34 |
| Comfort | 4.04 | .000 | .35 |
| Achievement | 1.57 | .119 | .12 |

Multiple R = .43
$R^2$ = .18
Adjusted $R^2$ = .17 F (4, 234) = 13.03, p < .001

A hierarchical regression analysis, controlling for self-esteem, was then conducted (table 6.22). Self-esteem was entered on step 1 and the Frustration-Discomfort sub-scales on step2. Self-esteem was a significant predictor at step 1, accounting for 22% of the variance and the frustration discomfort block was a significant predictor at step 2, explaining an additional 8% of the variance. However, emotional discomfort and achievement did not remain significant. Entitlement, similar to its relationship with anxiety, was a negative predictor of depressed mood.

Table 6.22 Hierarchical multiple regression predicting depression from Frustration-Discomfort, controlling for self-esteem

| Variables entered | t | p | Beta |
|---|---|---|---|
| *Criterion: Depression* | | | |
| Step1 | | | |
| Self-esteem | 8.20 | .000 | .48 |
| Step2 | | | |
| Emotional discomfort | 1.55 | .134 | .13 |
| Entitlement | 2.96 | .003 | -.25 |
| Comfort | 3.47 | .001 | .29 |
| Achievement | 1.55 | .122 | .11 |

Step 1: Multiple R = .47, $R^2$ = .22, $F_{cha}$ (1,228) = 65.93***
Step 2: Multiple R = .55, $R^2_{cha}$ = .08, $F_{cha}$ (1,224) = 6.41***

Next, a hierarchical multiple regression was conducted to control for negative affect (table 6.23). The HAD-A scale was entered on step 1 and the Frustration-Discomfort block on step 2. The Frustration-Discomfort group remained significant predictors for depression, with comfort as a significant positive and entitlement a significant negative predictor.

The failure of emotional discomfort to remain a significant predictor when controlling for negative affect or self-esteem may merely reflect the degree of shared variance between these variables. However, it could also suggest that secondary symptom stress, or depression about being depressed, is much less important compared to fear of fear. Thus, item Q(25) relating to fear of mental disturbance was not significantly related to depression ($r\ (239) = .11$, n.s.), but was correlated with anxiety ($r\ (239) = .27$, $p < .001$) even controlling for depression ($pr\ (239) = .16$, $p < .05$). This is in contrast to Cox, Enns, and Taylor's (2001) finding that the highest loading item, in a depressed group, on the cognitive dyscontrol factor was 'when I am nervous, I worry I might be mentally ill'.

Table 6.23 Hierarchical multiple regression predicting depression from Frustration-Discomfort, controlling for anxiety

| Variables entered | t | p | Beta |
|---|---|---|---|
| *Criterion: Depression* | | | |
| Step1 | | | |
| Anxiety | 9.21 | .000 | .51 |
| Step2 | | | |
| Emotional discomfort | 0.87 | .385 | .07 |
| Entitlement | 3.00 | .003 | -.25 |
| Comfort | 3.19 | .002 | .26 |
| Achievement | 0.81 | .418 | .06 |

Step 1: Multiple R = .51, $R^2 = .26$, $F_{cha}\ (1,237) = 84.75$***
Step 2: Multiple R = .56, $R^2_{cha} = .05$, $F_{cha}\ (1,233) = 3.96$**

Lastly, both negative affect and self-esteem were controlled in a hierarchical multiple regression (table 6.24). Self-esteem entered on step 2 accounted for 8% of variance after negative affect had been controlled. The Frustration-Discomfort block also remained significant, accounting for 3% additional variance. Comfort remained a significant predictor with a unique contribution specific to depression. In comparison, self-esteem when controlling for the Frustration-Discomfort sub-scales accounted for 9% additional variance ($R^2_{cha} = .09$, $F_{cha}(1,224) = 28.78$, $p = < .001$), and 5% when controlling for both variables ($R^2_{cha} = .05$, $F_{cha}(1,223) = 18.81$, $p = < .001$).

Table 6.24 Hierarchical multiple regression analyses: Frustration-Discomfort sub-scales predicting depression, controlling for self-esteem and anxiety

| Variables entered | t | p | Beta |
|---|---|---|---|
| *Criterion: Depression* | | | |
| Step1 | | | |
| HAD-A | 9.17 | .000 | .52 |
| Step2 | | | |
| Self-esteem total | 6.58 | .000 | .32 |
| Step3 | | | |
| Emotional discomfort | 0.23 | .822 | .02 |
| Entitlement | 2.47 | .014 | -.20 |
| Comfort | 2.83 | .005 | .22 |
| Achievement | 0.93 | .353 | .06 |

Step 1: Multiple R = .52, $R^2 = .27$, $F_{cha}(1,238) = 84.08$***
Step 2: Multiple R = .59, $R^2_{cha} = .08$, $F_{cha}(1,237) = 28.58$***
Step 3: Multiple R = .62, $R^2_{cha} = .03$, $F_{cha}(1,237) = 2.64$*

## 6.10 DISCRIMINATION BETWEEN EMOTIONAL PROBLEMS

It was predicted that discrete patterns of beliefs would be more predictive of certain difficulties compared to others. To test this hypothesis the patient sample was classified by cut points for anxiety and depression, and for clinical anger. A cross sectional comparison was made between three groups: Patients classified as having an anger problem, but not depressed, patients depressed but not angry, and patients experiencing both problems.

The means and standard deviation of each group on the measures are shown in table 6.25. There was no significant differences between these groups on age (F (2,157) = 2.316, ns) or gender ($\chi^2$ = 1.87, n.s). Since sample size was unequal and the Levene test indicated that groups did not have homogeneous variance on Trait anger or emotional discomfort, the Kurskal-Wallis test was used. The results match those found using a one-way ANOVA except that the emotional discomfort scale marginally failed to reach significance with the Kurskal-Wallis test (p = .089).

Table 6.25 Mean and standard deviations for anger, depression, and anger/depression groups

| Belief scale | Anger | Depression + Anger | Depression | Kurskal-Wallis $\chi^2$ |
|---|---|---|---|---|
| N | 79 | 47 | 36 | |
| Frustration-Discomfort | 101.3 (35.0) | 114.1 (33.7) | 95.3 (25.3) | 6.37* |
| Emotional discomfort | 30.9 (13.0) | 36.2 (10.7) | 33.8 (9.3) | 4.85 |
| Entitlement | 29.4 (10.6) | 30.5 (9.8) | 20.1 (8.4) | 22.54*** |
| Comfort | 22.7 (10.4) | 28.4 (13.2) | 24.2 (10.0) | 6.29* |
| Achievement | 18.3 (6.9) | 19.1 (6.2) | 17.2 (7.2) | 1.07 |
| Self-esteem full scale | 24.4 (5.4) | 19.8 (4.8) | 21.0 (4.0) | 23.01*** |
| HAD-A | 12.8 (4.1) | 15.9 (3.2) | 15.7 (3.2) | 21.62*** |
| HAD-D | 6.6 (2.7) | 13.7 (2.6) | 14.1 (2.5) | 120.85*** |
| TAS | 26.3 (4.6) | 27.3 (5.5) | 16.8 (2.8) | 82.53*** |

***p < .001, **p < .01, *p < .05

As expected, there was no difference between the depressed and anger/depressed groups on depression scores (t (77) = .374, n.s), or between the anger and anger/depressed groups on TAS scores (t (83) = .973, n.s.). The anger group had lower levels of anxiety compared to the other two groups. Also as expected, entitlement was significantly higher in the two anger groups (F (2,159) = 13.48, p < .001). The anger/depressed group had higher overall Frustration-Discomfort scores than both the anger (t (124) = 2.04, p < .05) and the depressed group (t (80) = 2.91, p < .01). The depressed and anger groups did not differ significantly from each other on total Frustration-Discomfort (t (113) = .93, n.s).

The higher total Frustration-Discomfort score in the anger/depressed group appears to reflect higher comfort ($t(81) = 2.56$, $p < .05$) and emotional discomfort scores ($t(112)$, 2.49, $p < .05$) compared to the anger group. Although emotional discomfort and comfort are associated with depression, it is important to note that there was no difference between the depressed and anger group on either comfort ($t(113) = 1.19$, n.s.) or emotional discomfort ($t(70) = .74$, n.s.). Thus, the higher scores on these two scales would seem specific to the combination of anger and depression, rather than reflecting an association with depressed mood.

Furthermore, the increase in Frustration-Discomfort in the anger/depression group does not appear related to greater emotional distress in this group, since there was no significant difference between levels of anxiety or depression between the depressed and anger/depressed groups. Nor was it related to higher Frustration-Discomfort scores associated with anger, since the anger group had lower overall Frustration-Discomfort scores. There is also little difference in self-esteem between these two groups. One possible explanation is that individuals in the angry/depressed group tend to experience more frustration intolerance depression, in addition to depression related to ego disturbance. If so, it would follow that beliefs most likely to be associated with this type of depression, namely comfort and emotional discomfort, would be elevated in this group. The correlation analysis of the Frustration-Discomfort sub-scales and the HAD-D scores for the depressed group supports this explanation. Thus, although the sample size is small, three sub-scales are *negatively* correlated with depression in the depressed group: entitlement ($r(36) = -.42$, $p < .01$), achievement ($r(36) = -.15$, n.s.), and emotional discomfort ($r(36) = -.04$, n.s.), with comfort having a small positive correlation ($r(36) = .06$, n.s.). In contrast, correlations between the Frustration-Discomfort sub-scales and the HAD-D are *positive*, although nonsignificant, in the depressed/angry group: emotional discomfort ($r(47) = .10$, n.s.), comfort ($r(47) = .21$, n.s.), entitlement ($r(47) = .05$, n.s.), and achievement ($r(47) = .06$, n.s.).

## 6.11 DISCRIMINATION BETWEEN CLINICAL AND STUDENT POPULATION

### 6.11.1 DESCRIPTIVE ANALYSIS

Significant differences in the mean Frustration-Discomfort scores were found between the clinical and student groups. Mann-Whitney tests showed equivalent levels of significance to the independent t-tests (table 6.27). All sub-scales, except entitlement, were higher in the clinical population. Not surprisingly, given that a primary feature of clinical problems is emotional distress, emotional discomfort had the largest mean difference. Age was not correlated with entitlement, and therefore the lack of differentiation between the two groups on entitlement was not age related. However, it is possible that the overall composition of the clinical group was not representative of entitlement problems. Thus, 55% of clients were classed as anxiety/depression, with which entitlement has a lower correlation, whereas only 13% were classed as having anger problems. Indeed, when comparing a sub-group of anger patients with the student group entitlement mean scores were significantly higher in the clinical group ($t(166) = 4.17$, $p < .001$).

Table 6.27 Frustration-Discomfort mean scores and standard deviations for clinical and student groups

| | Clinical | Non-clinical | t | Mean difference |
|---|---|---|---|---|
| Overall N | 242 | 87 | | |
| Full scale | 95.1 (34.5) | 72.6 (27.1) | 5.50*** | 22.5 |
| Emotional discomfort | 30.9 (12.2) | 18.5 (9.4) | 8.64*** | 12.4 |
| Entitlement | 25.0 (10.9) | 24.1 (9.3) | 0.69 | 0.9 |
| Comfort | 22.4 (11.5) | 16.6 (8.4) | 4.31*** | 5.8 |
| Achievement | 16.9 (7.0) | 13.6 (5.9) | 4.04*** | 3.4 |

***p < .001, **p < .01, *p < .05

Comparison of individual Frustration-Discomfort items between the clinical and student groups has been presented in chapter three (table 3.6). This indicated that fifteen of the items included in the final scale did not significantly differentiate the two groups. It would be expected that some beliefs would have elevated scores in the student group, since the particular frustrations of academic life such as academic work demands might specifically activate these. The lack of discrimination displayed by items Q(55) task obstruction, Q(18) task hassle, Q(74) task interest, Q(58) persistence, and Q(24) waiting, all of which are task orientated, would be consistent with this.

### 6.11.2 LOGISTIC REGRESSION

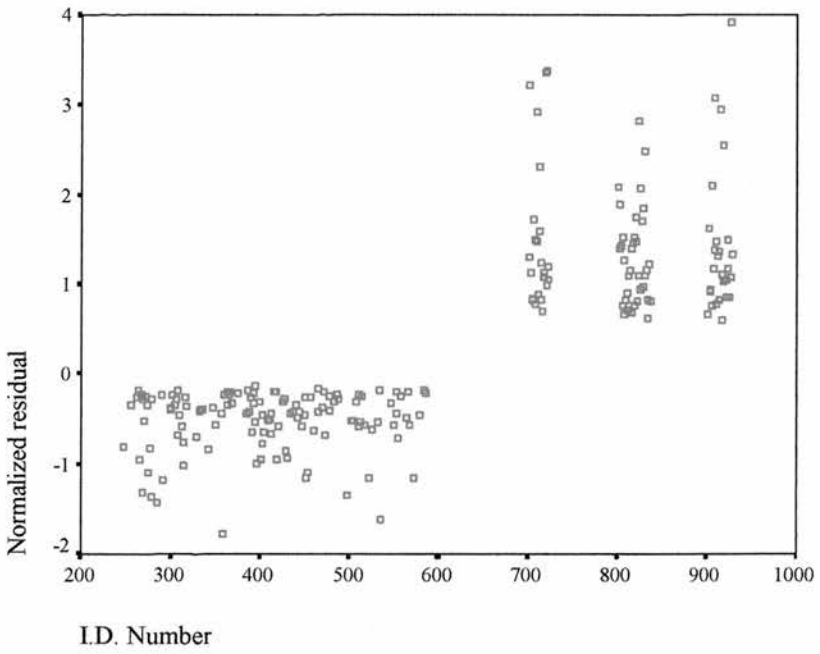
A hierarchical logistic regression analysis was conducted to determine the unique contribution of sub-scales to clinical status. Each Frustration-Discomfort sub-scale was entered separately, with those having the weakest relationship with clinical status entered first. The regression model with all four sub-scales as predictors was significant, indicating that Frustration-Discomfort reliably distinguishes between a student and patient population ($\chi^2$ (4) = 95.59, $p < .001$. In addition, the Hosmer and Lemeshow measure was non-significant suggesting a good model fit. The Nagelkerke $R^2$ was .368, that is, 37% of the variance between these two groups was accounted for by frustration intolerance beliefs. Classification tables show good prediction of cases, with an overall success rate of 78.4%, and with 91.4% of patients and 42.5% of students correctly identified.

The results of the separate regression steps indicated that entitlement, entered on step 1, had little relationship with status (-2LL = 379.61, $\chi^2$ (4) = 0.481. n.s.), and did not account for any substantial degree of variance (Nagelkerke $R^2$ = .002). Achievement entered second, was a significant predictor (-2LL = 360.23, $\chi^2$ (4) = 19.38, $p < .001$), and accounted for 8.6% of the variance (Nagelkerke $R^2$ = .086). Next comfort was also significant (-2LL = 338.79, $\chi^2$ (4) = 21.44, $p < .001$), and accounted for a further 8.6% of variance (Nagelkerke $R_2$ = 0.172). Finally, emotional discomfort entered last, was

significant (-2LL = 284.50, $\chi^2$ (4) = 54.29, $p < .001$), and accounted for 19.6% of additional variance above and beyond that already explained by the other sub-scales (Nagelkerke $R^2 = .386$).

### 6.11.3 REGRESSION DIAGNOSTICS

Figure 6.5 Plot of standardised residuals with case ID for clinical and three student sub-groups




deviations above the norm, and these were all students who had been wrongly classified in the patient group in the analysis (Figure 6.5). This would be expected, given that the student group will include a small number of emotional distressed individuals. Indeed, the mean scores for these ten individuals were significantly higher than that of the clinical group for all Frustration-Discomfort sub-scale means except comfort. Mann-Whitney tests showed there was no significant difference between these groups. However, there was still no significant difference in entitlement mean scores, between the clinical and student groups, following removal of these cases (t (317) = 1.15, ns).

## 6.12 DIVERGENT AND CONVERGENT VALIDITY

It was predicted that the Frustration-Discomfort sub-scales would show stronger correlations with measures of the same construct, compared to other constructs and measures of emotion disturbance. The two sub-scales from the Schema questionnaire, 'Entitlement' and 'Insufficient self-control', were clearly close in conception to aspects of low frustration tolerance. These two scales formed an 'impaired limits' domain, representing deficiencies in long-term goal formation, commitment and responsibilities. The DAS self-control sub-scale contained items related to frustration intolerance beliefs and demandingness, for example the avoidance of risk, emotional control, and easy solutions to problems.

There were strong intercorrelations between the Frustration-Discomfort and Schema overall scores, and the pattern was theoretically meaningful (table 6.28). Hypothesised differences between correlation coefficients were tested using a Fisher *z* transformation method (Meng, Rosenthal, & Rubin, 1992). As expected, the correlation between the two scales was significantly higher with the correlation of Frustration-Discomfort with self-esteem ($Z = 5.15$, $p < .001$). The difference in correlations was significant for entitlement ($Z = 17.7$, $p < .001$), comfort ($Z = 3.51$, $p < .001$), and achievement ($Z = 7.17$, $p < .001$). However, emotional discomfort was moderately correlated with both the Schema sub-scales and self-esteem, and did not therefore have a significantly higher correlation with either scale ($Z = .90$, ns).

The individual Schema sub-scales also interacted as expected. Entitlement was correlated with both the Schema entitlement and the Self-control sub-scales. This probably reflects the overlap of items between the Schema sub-scales with specific anger items included in both. The Self-control sub-scale is described as reflecting difficulties with frustration tolerance and an 'exaggerated emphasis on discomfort-avoidance' (McGuinn & Young, 1996). Not surprisingly, it correlates highly with both

comfort and emotional discomfort. The achievement frustration sub-scale had a weaker, although still significant, relationship with the schema scale.

The DAS sub-scale had lower correlations with the Frustration-Discomfort Scale than the schema scale, although significant at $p < .001$. However, the correlation of the DAS with the Schema sub-scales was also low, and marginally lower than with the Frustration-Discomfort scale. There was no significant relationship between the DAS and self-esteem, which supports the construct validity of the Frustration-Discomfort Scale as measuring aspects of self-control separate from self-esteem. Overall, the DAS is most strongly associated with entitlement, but had no strong relationship with any one scale.

Table 6.28 Intercorrelations of the Frustration-Discomfort Scale with the Rosenberg scale, Schema, and DAS sub-scales

| | Schema Total | Schema Entitlement | Schema Self-control | DAS | Self-esteem |
|---|---|---|---|---|---|
| Full scale | .60*** | .34*** | .58*** | .26*** | -.36*** |
| Emotional | .49*** | .17* | .50*** | .19** | -.44*** |
| Entitlement | .57*** | .49*** | .48*** | .26*** | -.16* |
| Comfort | .54*** | .21*** | .56*** | .20** | -.36*** |
| Achievement | .33*** | .25*** | .28*** | .22*** | -.17* |
| Self-esteem | -.37*** | .12 | -.42*** | -.05 | |

N = 229 *** $p < .001$, ** $p < .01$, * $p < .05$

Six items on the Frustration-Discomfort Scale correlated $p < .001$ with the DAS: Q(58) persistence, Q(46) easy solutions, Q(41) emotional control, Q(61) gratification delay, Q(23) oppositional beliefs, and Q(24) waiting. Correlations between the Frustration-Discomfort sub-scales and items on the Schema scale were also conceptually consistent. Both the comfort scale and emotional discomfort scales were most strongly correlated with the item ' I can't force myself to do things I don't enjoy, even when I know it's for my own good' ($r = .56$ and $.43$, $p < .001$). Similarly, the entitlement scale was most

strongly correlated with 'I lose my temper at the slightest offence' ($r = .43$, $p < .001$). Unexpectedly, the achievement scale was most correlated with 'I get bored very easily' ($r = .30$, $p < .001$).

Intercorrelations with the emotional disturbance measures indicated that both the DAS and Schema sub-scales correlated highest with anger (table 6.29). However, the correlation between anger and the Schema scales are confounded in that three of the Schema questions directly refer to anger. Neither the DAS nor the Schema entitlement scale correlated significantly with depression or anxiety. However, the Schema self-control scale was moderately correlated with anxiety and depression. The lack of relationship between the DAS and the anxiety, depression, and self-esteem scales was unexpected. There was no significant difference in the mean DAS score in depressed compared to non-depressed patients ($t(236) = .15$, $p = .878$) or between anxious and non-anxious patients ($t(237) = .86$, $p = .393$). In contrast, Power et al. (1995) found that the self-control sub-scale distinguished between depressed and healthy groups. However, examination of the sub-scale items reveals that these are very positively worded with reference to positive control and happiness, and also the imperative 'shoulds' are not worded in absolute terms.

Table 6.29 Intercorrelations of the DAS and Schema sub-scales and emotional disturbance measures

| | Schema | Entitlement | Self-control | DAS |
|---|---|---|---|---|
| Entitlement | .64*** | | | |
| Self-control | .95*** | .40*** | | |
| DAS | .26*** | .13 | .24** | |
| HAD-Anxiety | .33*** | .08 | .35*** | .08 |
| HAD-Depression | .33*** | .01 | .39*** | -.04 |
| Trait anger scale | .62*** | .50*** | .54*** | .23*** |

N = 228 *** $p < .001$, ** $p < .01$, * $p < .05$

## 6.13 DISCUSSION

These results showed that overall the Frustration-Discomfort scale was significantly related to emotional disturbance. More importantly, different emotional disorders were uniquely associated with different dimensions of frustration intolerance, and these were consistent with predicted theoretical relationships. In addition, the Frustration-Discomfort beliefs remained significantly related even when negative affect and overlapping variance with self-worth was taken into account. Given that a substantial degree of overlap was expected between these variables this indicates that the Frustration-Discomfort factors are robust and meaningful, and independent from self-evaluative beliefs.

Entitlement was a significant predictor of anger independent of self-esteem, accounting for 30% of the variance. In contrast, the positive self-esteem scale had no significant association with anger, and the negative scale a weak significant correlation that failed to remain significant when controlling for frustration intolerance. This suggests that anger is overwhelmingly associated with frustration intolerance beliefs, rather than self-worth. Achievement frustration was also correlated with anger, even when controlling for self-esteem, although it contributed little additional variance to that of entitlement. However, the relationship between achievement, the difference score, and anger was interesting. The difference score was correlated with anger and achievement and this was not diminished when controlling for self-esteem. This supports the hypothesis that the difference scale represents self referential beliefs but not those involving global self-evaluation. These beliefs may involve demands regarding personal performance but reflect intolerance of their behaviour rather than global self condemnation.

Regarding anxiety, all four sub-scales contributed significant unique variance even when self-esteem was controlled, accounting for 16% of the remaining variance. This compares to 4% of variance explained by self-esteem when Frustration-Discomfort was similarly controlled. When negative affect was partialled out only emotional discomfort

remained a significant predictor. This sub-scale was predicted to have a unique relationship with anxiety, and highlights the importance of secondary symptom disturbance in the maintenance of anxiety disorders. It would be of interest to investigate further the role of individual sub-scales in relation to specific anxiety disorders. For instance, there is evidence that anxiety sensitivity and anger are significant predictors of PTSD symptoms and outcome (Fedoroff et al., 2000; Riggs et al., 1992), suggesting that both entitlement and emotional intolerance may be centrally involved in this disorder.

The relationship of frustration intolerance with depression was less pronounced compared to anxiety. Frustration-Discomfort accounted for 18% of variance and this was reduced to 8% when controlling for self-esteem. This compared to 22% of the variance explained by self-esteem, reduced to 9% when controlling for Frustration-Discomfort, suggesting that both these belief categories are equally involved in depression. As predicted, comfort was the only significant positive unique predictor. However, the interaction of these beliefs with depression is likely to prove complex, and the correlational design means that causal explanations are unable to be made. For instance, it has been suggested comfort beliefs may lead to general dissatisfaction with life, and reduced opportunities for rewarding fulfilment, and therefore may contribute to the development of depression (DiGiuseppe, 1991a). On the other hand, depressed mood itself may generate secondary beliefs that problems are too difficult to overcome *because* of low mood.

The relationship of anger and depression with frustration intolerance was intriguing. Comparison of sub-scale scores indicated that the angry/depressed group was higher on frustration intolerance compared to other emotion groups. It was proposed that this might be explained if the anger/depressed group reflected higher levels of 'discomfort depression'. That is, patients with coexisting anger and depression were more likely to endorse frustration intolerance beliefs, specifically in respect to the comfort and emotional discomfort sub-scales, compared to depressed patients without anger. This might support the hypothesis that angry-depression involves a different sub-type of

depression (Eckhardt & Deffenbacher, 1995). It is also consistent with REBT theory that hypothesises that two types of depression may be distinguished in terms of frustration intolerance and self-worth beliefs.

DiGiuseppe (1999) has argued that individuals alternate between anger/depression due to shifting beliefs regarding the direction of blame and self-efficacy. That is, with other-blame and high self-efficacy the emotion is anger but with self-blame and low self-efficacy it is depression. Other-blame is an important category of irrational beliefs (Ellis & Dryden, 1987), and one that has been proposed as central to anger (Hauck, 1980). Similar to self-blame, it involves global condemnation of others as opposed to simple attributions of fault. However, the relationship of other-blame with frustration intolerance or self-worth is unclear. Evidence from the General Attitude and Belief Scale (Bernard, 1998) indicates that, compared to other sub-scales, these beliefs had a weaker relationship with emotional disturbance, including anger, and failed to distinguish between clinical and non-clinical groups. The present research certainly points to entitlement beliefs as central to anger, and whether other-blame is independently related to this emotion is a question for further research. Likewise, the shifts between anger and depression experienced by some individuals could be explained by the co-existence of both frustration intolerance and self-worth beliefs, and changes in the relative salience of these. Thus, low self-blame and deserved loss will be related to depression but, with greater levels of entitlement, this deprivation turns to anger and, with greater levels of comfort beliefs, to discomfort depression. The relative salience of these types of belief may depend on a variety of factors including attributions regarding blame or fairness (Frijda, 1986).

The hypothesised relationship of the achievement sub-scale to anxiety and depression was supported. Achievement was significantly correlated with both anxiety and depression even when controlling for self-esteem. However, this relationship was weaker in regard to depression. Achievement also remained significantly correlated with anxiety when controlling for negative affect, but failed to remain so with depression. In

comparison, previous research has shown a stronger association between maladaptive perfectionism and depression rather than anxiety (Minarik & Ahrens, 1996). This suggests that, *in the absence of global self-evaluation*, perfectionistic beliefs may be more closely related to tension and anger than depression. The present findings also indicate that high standards, when worded in terms of intolerance of frustrated achievement goals, are significantly related to emotional disturbance. This suggests the conclusion that perfectionistic high standards, when separated from negative self-evaluation, are necessarily functional is mistaken (Frost et al., 1993). It remains to be investigated whether perfectionism when related to frustration intolerance as opposed to self-evaluation is associated with distinct types of anxiety. Certainly, for example, the finding that aspects of adaptive perfectionism were related to PTSD after controlling for depression is of interest (Kawamura, 2001).

There are some possible limitations to the study. Kendall et al. (1995) underline the need for appropriate dependent measures of emotion. A particular issue as regards REBT theory is the distinction made between healthy negative and unhealthy negative emotions, for example between 'annoyance' and 'anger'. REBT theory also argues that intense emotion is not necessarily indicate disturbed emotion. Some of the items on the measures of emotional disturbance do not reflect this distinction, for instance one item on the TAS is worded 'I feel annoyed...'. However as Mcdermut et al. (1997) have noted, there are no current measures of emotion that employ REBT emotional theory, and with both the TAS and the HAD valid and reliable measures of clinical disturbance, this problem may be overstated.

# CHAPTER SEVEN

# PROBLEMS OF SELF-CONTROL

## 7.1 INTRODUCTION

Self-control problems encompass a wide range of behaviours including alcohol and drug use, compulsive shopping, comfort eating, self-harm, and procrastination (see Baumeister, Heatherton, & Tice, 1994 for review). They can be argued to represent the failure to regulate desire in spite of long-term negative consequences, to be closely associated with cognitive and behavioral avoidance, and to typify frustration intolerance This chapter aims to investigate the relationship between frustration intolerance and these problems, specifically examining self-harming.

The relationship between Frustration-Discomfort intolerance and self-harming has frequently been noted in the clinical literature. Likewise, an association between self-harming and other self-control problems has also been described. For instance, Favazza and Conterio (1989) report that 61% of self-mutilators describe a history of eating disorder. In turn, individuals with bulimia and bingeing/purging eating disorders are more likely to abuse alcohol, with increases in abnormal eating going along with increases in substance abuse (Krahn, 1991). Other studies also report significant relationships between alcohol, drug abuse, eating problems and self-harming (Lacey, 1993). A diagnosis that frequently coexists with self-harm, eating disorders and substance abuse, is that of borderline personality. Indeed, self-harming has been considered a marker for borderline personality. This group is characterised by unstable relationships as well as self-control problems including substance abuse, binge eating, and anger. A variety of models have been proposed to explain failures in self-control and the percieved association between these problems.

Impulsiveness has been proposed as a central trait underlying self-control difficulty (Favazza & Simeon, 1995). Evens, Platts, and Liebenau (1996) found that individuals who repeated self-harm when compared with initial presenters had higher levels of impulsiveness. Likewise, Simeon et al. (1992) found a significant correlation between frequency of self-mutilation and impulsivity. Supporting this, Links, Heslegrave, and Reekum (1999) found that 'impulsiveness' was the characteristic most strongly predicting enduring borderline personality problems. Other researchers have suggested that a sub-group of patients show a range of impulse disorders, in addition to any specific problem. Lacey and Evens (1986) have described this group as suffering from 'multi-impulsive personality disorder'. However, the evidence for an association between measures of impulsiveness and impulse control disorders has been mixed. Stanford and Barratt (1992), for instance, reported no relationship between total scores on an impulsivity scale and total number of impulsive disorders. Similarly, Hawton et al. (1999) did not find a predicted difference in impulsivity scores between repeating and non-repeating self-harming adolescent groups. This lack of relationship between measures of impulsivity traits and behaviours is a common finding. Although some studies do find correlations between impulsiveness and, for instance, borderline personality (Trull, 1992), a difficulty is that that the diagnostic criteria for this personality disorder includes the problems argued to coexist with it. A similar limitation occurs in research on impulsiveness, whereby problems defined as impulsive are then used in a circular manner to support the definition. Furthermore, the categorisation of problems as being impulsive often appears to lack a clear conceptual basis. For example, it is unclear what aspects of bulimia are impulsive, with clinical evidence suggesting that eating violations, whilst seemingly spontaneous, are frequently planned. Indeed, there is considerable disagreement as to whether impulsive disorders are functionally equivalent, or if the similarities are superficial, for instance simply reflecting greater emotional disturbance in these groups (Wilson, 1991).

Another theory that may link these problems is the regulation of affect (e.g. Baumeister et al., 1994) For instance, it has been argued that alcohol is used to regulate negative

affect, in particular by reducing tension (Conger, 1956; Cooper et al., 1995). However, the evidence for a general relationship between stress and drinking has been inconsistent (Sayette, 1999) and it has therefore been suggested that affect regulation may be important for some individuals but not others (Cooper et al., 1992). In this regard, anxiety sensitivity has been proposed as a distinguishing feature of this group rather than simply trait anxiety (McNally, 1996). Similarly, bulimia and binge eating are suggested as methods of reducing negative affect, specifically in relation to the discomfort associated with self-awareness of the failure to meet personally high standards (Heatherton & Baumeister, 1991). Bulimics are also more likely to have other self-control problems and, for instance, twenty-one percent of compulsive shoppers report a history of substance abuse and a third reporting frequent binge eating (Faber et al., 1995).

As regards self-harm, characteristically this is described as following a build up of frustrating events and associated tension (Herpertz, 1995). This increased level of arousal is relieved by the act of self-harming, with individuals reporting a sense of relaxation and reduced distress. Experimentally these clinical observations are supported by research showing immediate and significant reductions in psychophysiological arousal following self-mutilation using guided imagery (Haines et al., 1995). It has been argued that the effectiveness of this tension reduction method results in the behaviour becoming a habitual means of coping with unpleasant emotional states. Lacey and Evens (1986) have also suggested that problems of impulse control are 'closely related to difficulty in coping with depressive emotions and anxiety'. A similar hypothesis, suggesting impulsivity results from attempts to reduce psychological distress, has been proposed by Favazza and Rosenthal (1993). Several writers have emphasised the importance of 'affective instability' in self-harm, and Linehan (1993) considers that a biological tendency to exaggerated emotional responses and lack of skill at regulating these is a central to borderline personality. Kruedelbach et al. (1993) found that for substance abusers, craving was higher in response to negative emotional states, such as tension, in individuals diagnosed with borderline personality. Binge eating has also been

viewed as a maladaptive affect regulation strategy aimed at short-term reduction in discomfort (Telch, Agras, & Linehan, 2000). Other examples of this relationship are provided by evidence that attempts to enhance positive or reduce negative emotion may mediate between impulsiveness and alcohol intake (Cooper et al., 1995). More generally, it has been suggested the central characteristic of personality disorder is avoidance of painful affect and cognitions resulting from aversive conditioning (Young, 1994).

It is unclear if all emotions are implicated in this disregulation or if some are more problematic. Herpetz (1995) found that more than three-quarters of his sample of self-harmers emphasised ending 'intolerable tension', with anger the second most frequent emotion. The importance of depression has also been highlighted and the results of Hawton et al. (1999) suggested that depression was the main factor associated with repetition of deliberate self-harm. However, a study by Kent et al. (1997) found there was no evidence to support depression as a mediator between eating disorder and self-harm. They argued that it was more likely that low self-esteem, which occurs independently of depression, is associated with both of these problems. They speculate that, rather than depression, a combination of low self-esteem and poor impulse control is central to self-harming behaviour.

Certainly, anger and hostility are prominent in self-harm (Crook, Raskin, & Davies, 1975), and the frequency of self-mutilation is correlated with chronic anger (Simeon et al., 1992). Similarly, Milligan and Waller (2001) found that a range of internally directed impulsive behaviours, including purging and self-harm, were associated with higher trait anger in non-clinical individuals. However, the reason for this association is less clear. It may be that all emotional states are aversive, and that self-harming and other impulsive behaviours represent general strategies to reduce negative affect including anger. Several theorists have suggested a relationship between self-esteem and 'self-anger'. Power and Dalgleish (1997) argue that a basic emotion involved in self-harm is that of self-disgust. Thus, childhood abuse may lead to lower self-esteem and a

tendency to be disgusted with aspects of the self. For such individuals, derogatory thoughts and accompanying feelings would be particularly aversive, consistent with Heatherton and Baumeister (1991) theory that the individual is escaping self-awareness.

Whilst several self-control problems, such as compulsive shopping, have been related to low self-esteem (Faber, 1992) there are weaknesses with this model. For instance, in contrast to evidence that bulimia is related to low self-esteem (Mizes, 1988), Weisberg, Norman, and Herzog (1987) describe bulimics as characteristically narcissistic, egocentric, and angry. Clearly, dissatisfaction with aspects of ones behaviour is not the same as poor self-worth, and possibly reflects frustration at not achieving ones best. Similarly, compulsive shopping has been associated with percieved relative deprivation (Hoch & Loewenstein, 1991). This again raises the issue as to whether such frustrations are best regarded as aspects of ego disturbance or frustration intolerance. The narrow definition of frustration intolerance as pertaining to loss of 'comfort' ignores other facets of this concept, particularly the frustration related to entitlement and frustration of achievement goals. More generally, whilst bingeing has been specifically linked to negative affect regarding the self (Heatherton, Herman, & Polivy, 1991) other self-control problems can be triggered by a variety of everyday frustrations and discomforts. Thus, Herpertz (1995) found that 83% of self-harmers report specific frustrating events prior to self-injury. In this respect, Cognitive behavioural models of self-harming have proposed that successful coping depends on the reappraisal of negative events as being less threatening (Ryan, Parle, & Babridge, 1998). REBT would also argue that, in addition to inferences regarding the degree of threat, that disturbance primarily entails core beliefs about its intolerability and awfulness. Certainly, the evidence does not support the theory that self-harming simply reflects a lack of coping skills (Haines & Williams, 1997).

REBT theory would suggest that the central underlying process in self-control problems is that of frustration intolerance. However, it is unclear if different types of self-control problem can be distinguished in terms of the different dimensions of frustration

intolerance. Likewise, associations between problems may also reflect the interactions between groups of belief. Generally, theoretical models have often focused on one psychological process and assumed that this underlies different types of self-control problem. Yet a model in which there are a number of interacting processes can be proposed, involving different dimensions of frustration intolerance, both as primary and secondary aspects of the behaviour. For example, maintaining abstinence from smoking may depend on toleration of withdrawal symptom discomfort (West, Hajek, & Belcher, 1989), the experience of emotional discomfort (Kenford et al., 2002), or a sense of deprivation and entitlement (Riley, 1992).

## 7.2 METHOD

### 7.2.1 PROCEDURE AND MEASURES

The Dysfunctional Coping Inventory was included as a part of the questionnaire packet distributed to the clinical group, as described earlier. This was designed specifically for this study and its development is described in the following section. In this inventory, one item referred to self-harming, 'I injury myself or overdose', and this was used as a measure of self-harm. Clearly, the definition of self-harm varies considerably, and ranges from a narrow definition of repetitive non-suicidal cutting to broader definitions including suicide attempts. Generally, deliberate self-harm has been distinguished from attempted suicide by the function of the behaviour, the former having non-lethal intent. However, there is an overlap between these categories, and overdosing can be used as a form of non-suicidal self-harming. Given this, and the difficulty of determining the intent of actions by self-report, it was decided to include overdosing within the broader definition.

### 7.2.2 PARTICIPANTS

All individuals in the clinical group were involved in the Dysfunctional Coping Inventory study (n = 242). For the analysis of self-harm, 56 patients who gave positive replies on item Q(7) of the coping inventory were classified as self-harming. These individuals were compared to the remaining clinical group of 186. The self-harming distribution was significantly positively skewed (Z = 13.29), with 76% of patients non-harming (table 7.1). The two missing values were excluded from the self-harm analysis.

Table7.1 Responses to Q(7) 'I injure myself or overdose'

| | | Frequency | Percent |
|---|---|---|---|
| | not at all | 184 | 76.0 |
| | somewhat | 28 | 11.6 |
| | moderately | 11 | 4.5 |
| | very much so | 17 | 7.0 |
| | Total | 240 | 99.2 |
| Missing | | 2 | .8 |
| Total | | 242 | 100.0 |

## 7.3 DEVELOPMENT OF THE DYSFUNCTIONAL COPING INVENTORY

### 7.3.1 INTRODUCTION

The initial aim was to measure a range of dysfunctional coping behaviours that were related to Frustration-Discomfort intolerance. However, a number of difficulties emerged. First, it was necessary to distinguish the types of dysfunctional behaviours that might be relevant, and to choose an appropriate assessment scale. Although many coping measures are available, reviews suggested that many suffer from considerable methodological problems (Endler & Parker, 1990). For example, the two most widely used scales, the Ways of Coping Questionnaire (Folkman & Lazarus, 1988) and the COPE (Carver, Scheier, & Weintraub, 1989), have poor reliability and validity (De Ridder, 1997). There is also a lack of consensus as to the concept of coping or the types

of responses that best describe this. A further difficulty in this respect is that coping scales have tended to measure positive coping responses, whereas the Frustration-Discomfort scale is concerned with irrational beliefs and dysfunctional behaviour. Although Endler and Parker's (1990) Coping Inventory for Stressful Situations does measure avoidance strategies, examination of the avoidance sub-scale items indicates many items refer to positive coping methods.

It was therefore decided to produce an inventory focusing on a range of dysfunctional coping strategies, specifically problems of self-control. A survey of the type of dysfunctional behaviours associated with frustration intolerance in the REBT literature resulted in a checklist of nineteen items. Individuals were asked to rate the nineteen items in terms of their usual methods of coping with 'distress, discomfort, or frustration'. Items were scored on a four-point Likert scale ranging from 0 ('not at all') to 3 ('very much so').

### 7.3.2 DYSFUNCTIONAL COPING INVENTORY: PRELIMINARY ANALYSIS

Seventeen replies were missing (0.4%) and means were substituted for these items. Two items had less than 10% of responses in adjacent categories: Q(16) vomiting/laxative use and Q(13) drug use. In addition, Q(18) rumination had a markedly skewed distribution with over 73% of the responses in the highest category. Examination of item intercorrelations showed that two items, Q(1) difficult tasks and Q(2) withdraw, were highly correlated, suggesting redundancy ($r\ (242) = .71$). Reliability analysis took the form of an iterative process: items with the lowest reliability were removed and item-total correlations recalculated. Initial reliability analysis is presented in table 7.2. However, even after removal of the three items with frequency problems and redundancy, reliability was still poor. The mean inter-item correlation (.12) and the alpha coefficient (.667) were below acceptable levels and indicated a relatively poor degree of association between some items: Seven items fell below the criterion for corrected item-total correlations (> .3).

Since this lack of association might suggest independent dimensions, an exploratory factor analysis using varimax rotation was applied to the remaining fifteen items. This indicated that there may be at least three factors involved, but there were insufficient items to adequately represent the two smaller factors, each of which only contained three items. The first rotated factor accounted for 17% of the variance and the other two 11% each, with 39% of overall variance accounted for. However, reliability analysis of the first factor showed low homogeneity, with a mean item correlation of .17 and alpha of .645, suggesting that items were poorly interrelated. Communality values were also low, with eight of the items having values below .35, indicating that relatively little of the variance of these items was explained. The Kaiser's measure of sampling adequacy at .67 was also just above the acceptable value of .60.

Table 7.2 Dysfunctional Coping Scale: Reliability analysis

| | | Corrected item-total correlations |
|---|---|---|
| 1 | I avoid difficult tasks | .356 |
| 2 | I withdraw from unpleasant situations | .421 |
| 3 | I mentally shut off | .402 |
| 4 | I restrict my eating by diet or exercise | .187 |
| 5 | I seek reassurance | .355 |
| 6 | I keep myself constantly 'busy' | .064 |
| 7 | I injure myself or overdose | .269 |
| 8 | I distract myself with more pleasant activity | .337 |
| 9 | I enlist the help of others | .208 |
| 10 | I put things off | .393 |
| 11 | I use alcohol for relief | .192 |
| 12 | I restrict myself to familiar routines | .334 |
| 13 | I use recreational drugs for relief | .161 |
| 14 | I become over involved in work | .158 |
| 15 | I comfort eat | .419 |
| 16 | I restrict my eating by vomiting or laxatives | .214 |
| 17 | I overspend on unnecessary things | .445 |
| 18 | I go over and over worries in my mind | .273 |
| 19 | I rely on medication to obtain symptom relief | .386 |

The coping inventory was therefore thought to be inappropriate as an overall measure of dysfunctional coping, although individual items were used in further analysis. Examination of skewness statistics and inspection of the item distributions indicated that, in addition to the three items mentioned above, a further three items had significantly skewed distributions with Z scores $p = < 0.01$: Q(4) dieting, Q(11) alcohol, and Q(18) ruminations. Although in larger samples moderate deviations in skewness and kurtosis from normality do not have a substantive effect on statistical analysis (Tabachnick & Fidell, 2000) non-parametric tests were used for all these items.

## 7.4 RESULTS

### 7.4.1 RELATIONSHIP BETWEEN SELF-CONTROL ITEMS

The dysfunctional coping intercorrelation matrix is shown in table 7.3. Q(7) Self-harm, is significantly correlated with Q(17) overspending, Q(16) 'bulimia', Q(15) comfort eating, and Q(13) drug and Q(11) alcohol use. This is consistent with research that suggests these problems are interrelated (Lacey, 1993). However, there was no significant relationship between alcohol use (defined as endorsement of 'moderately' or 'very much so') and 'bulimia' ($\chi^2$ (2) = 2.60, ns), but self-harmers were more likely to use alcohol ($\chi^2$ (2) = 8.64, $p < .01$), and use 'bulimic' purging ($\chi^2$ (1) = 10.76, $p < .001$). Comparing 'bulimia' with self-harmers without 'bulimia' indicated that the self-harming group had higher levels of anger (t (63) = 2.80, $p < .01$), but there was no significant differences regarding depression, anxiety or self-esteem. The 'bulimic' group had significantly higher scores on the comfort sub-scale, (t (63) = 2.28, $p < .05$). Overspending itself was most strongly related to comfort eating, 'bulimia', and cognitive avoidance.

Table 7.3 Correlation matrix (Spearman's *rho*): Dysfunctional coping inventory

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | | | | | | | | | | | | | | | | | | |
| 2 | **.70** | - | | | | | | | | | | | | | | | | | |
| 3 | **.40** | **.39** | - | | | | | | | | | | | | | | | | |
| 4 | .01 | .08 | .08 | - | | | | | | | | | | | | | | | |
| 5 | -.12 | .17 | .03 | .12 | - | | | | | | | | | | | | | | |
| 6 | .04 | -.02 | .03 | .15 | .16 | - | | | | | | | | | | | | | |
| 7 | .04 | .05 | **.28** | .06 | .09 | -.07 | - | | | | | | | | | | | | |
| 8 | .12 | .12 | .08 | -.01 | **.20** | -.02 | .02 | - | | | | | | | | | | | |
| 9 | -.04 | .04 | .07 | .08 | **.28** | -.09 | -.06 | **.25** | - | | | | | | | | | | |
| 10 | **.25** | **.29** | **.27** | -.03 | .16 | -.18 | .11 | **.36** | **.20** | - | | | | | | | | | |
| 11 | .05 | .05 | .08 | .04 | .03 | -.14 | **.24** | .19 | .12 | **.23** | - | | | | | | | | |
| 12 | **.36** | **.26** | .11 | .06 | **.21** | -.01 | .13 | .12 | .06 | **.25** | .01 | - | | | | | | | |
| 13 | .01 | .01 | .13 | .05 | -.09 | -.07 | **.21** | .09 | .08 | .10 | .18 | .09 | - | | | | | | |
| 14 | -.05 | -.01 | .07 | .04 | .10 | **.43** | -.07 | .01 | .14 | .03 | -.09 | -.01 | -.10 | - | | | | | |
| 15 | .18 | **.25** | .17 | .08 | **-.32** | -.01 | **.20** | **.23** | .04 | **.24** | .03 | .19 | .10 | .14 | - | | | | |
| 16 | -.05 | .05 | .16 | **.24** | .05 | .09 | **.21** | .10 | -.02 | .10 | .07 | -.01 | .06 | .09 | .14 | - | | | |
| 17 | .15 | **.20** | **.25** | .07 | **.21** | -.03 | **.25** | **.25** | .04 | .19 | .13 | **.20** | .12 | **.21** | **.31** | **.22** | - | | |
| 18 | .12 | .17 | .07 | .11 | **.24** | .07 | .18 | .06 | -.03 | .14 | .04 | **.27** | .02 | .15 | .19 | .14 | **.20** | - | |
| 19 | **.22** | .12 | **.32** | .16 | .14 | .03 | .17 | **.22** | .11 | **.24** | .08 | .17 | .19 | .01 | **.22** | .05 | .17 | .15 | |

Correlations above .13, p > .05; above .17, p > .01; above .20, p > .001 (Correlations p > .001 shown in bold)

Q(12) Routine and Q(10) procrastination were significantly correlated with Q(2) behavioural avoidance items and, less expectedly, Q(17) overspending. Some differences between cognitive and behavioural avoidance emerged. Consistent with Heatherton and Baumeister (1991) proposal that bulimics and binge eaters are trying to avoid disturbing thoughts, the 'bulimia' item significant correlated with Q(3) cognitive avoidance but not with behavioural avoidance. Self-harming and drug use had the same pattern. Interestingly however, restricted eating had no relationship with the avoidance items. Routine was the only item that correlated with behavioural avoidance but not cognitive avoidance. Not surprisingly, the two items Q(14) overworking and Q(6) activity were significantly related to each other but had negligible relationships with other self-control items, apart from overworking being correlated to overspending.

### 7.4.2 RELATIONSHIP BETWEEN SELF-CONTROL ITEMS AND FRUSTRATION INTOLERANCE

The correlations between the Frustration-Discomfort sub-scales and individual items are shown in table 7.4 (Spearman's *rho* was used as the non-parametric statistic when appropriate). The relationship of each item with the Rosenberg Self-Esteem Scale is also included for comparison. As expected, both self-esteem and frustration intolerance were significantly correlated with a range of dysfunctional problem behaviours.

Clearly, the wording of the procrastination item can be interpreted as referring to a wide range of activities from the avoidance of distressing situations to the avoidance of everyday tasks. Therefore, not surprisingly it is significantly correlated with both comfort and emotional discomfort. Using a hierarchical multiple regression analysis, comfort, when entered on step1, was a significant predictor of procrastination ($F_{cha}$ = 14.95, $p < .001$). Emotional discomfort entered next failed to account for any further variance ($F_{cha}$ = .59, p = .444), nor did entitlement ($F_{cha}$ = .06, p = .814). However, achievement frustration was a significant negative predictor ($F_{cha}$ = 8.86, p = .003).

Table 7.4 Correlations between coping items, Frustration-Discomfort sub-scales, and self-esteem scale (items using Spearman's *rho* marked **R**)

| | Self-esteem | Total Frustration-discomfort | Emotional discomfort | Entitle-ment | Comfort | Achieve |
|---|---|---|---|---|---|---|
| Avoidance of difficulty | -.24*** | .18** | .22*** | .03 | .27*** | .04 |
| Withdrawal | -.19* | .26*** | .29*** | .12* | .30*** | .10 |
| Cognitive avoidance | -.25*** | .24*** | .31*** | .14* | .21*** | .09 |
| Eating restriction | -.14* | .13* | .15* | -.01 | .14* | .14* |
| Reassurance | -.24*** | .28*** | .24*** | .28*** | .21*** | .18** |
| Activity | -.12 | .11 | .01 | .13 | -.04 | .39*** |
| Self harm **R** | -.38*** | .19*** | .24*** | .14* | .17** | .07 |
| Pleasurable distraction | -.22*** | .22*** | .19** | .24*** | .25*** | -.01 |
| Support | .07 | .19** | .15* | .21*** | .17** | .09 |
| Procrastinate | -.28*** | .18** | .20** | .11 | .24*** | .-04 |
| Alcohol **R** | -.13* | .02 | .03 | .06 | .03 | .04 |
| Routine | -.31*** | .31*** | .23*** | .17** | .39*** | .21*** |
| Drugs **R** | -.09 | .04 | .09 | .05 | .09 | -.05 |
| Overwork | .01 | .14 | .09 | .13 | .01 | .34*** |
| Comfort eating | -.38*** | .28*** | .27*** | .23*** | .24*** | .19** |
| Vomiting **R** | -.16* | .07 | .09 | .03 | -.01 | .12* |
| Overspend | -.25*** | .31*** | .28*** | .32*** | .27*** | .08 |
| Rumination **R** | -.30*** | .28*** | .29*** | .22*** | .19*** | .28*** |
| Medication | -.25*** | .34*** | .39*** | .20** | .33*** | .15* |

N (self-esteem) = 232; N (Frustration-Discomfort) = 242 ***p < .001, **p < .01, *p < .05

Neither the alcohol or drug use items were correlated with any of the Frustration-Discomfort sub-scales, although self-esteem was weakly correlated with alcohol use. There was no significant difference on mean Frustration-Discomfort scores between

individuals using alcohol moderately/very much and those using it slightly/not at all ($t(242) = .76$, ns). This is surprising given that alcohol problems have been specifically linked to low frustration tolerance beliefs (Ellis et al., 1988; Greenwood, 1985). It is also contrary to previous results that have found positive correlation between irrational beliefs and drinking problems (Hutchinson et al., 1998). Neither Q(48) excitement or Q(21) buzz were discriminators of alcohol use, and the only significant discriminating item was Q(72) indulgence ($t(240) = 2.41$, $p < .05$).

Consistent with entitlement as involving immediate gratification and indulgence, this sub-scale was most strongly associated with overspending. This is also consistent with the beliefs described by compulsive shoppers and reported by Rook (1987), such as 'to hell with everything else. I want it and I'm going to get it' and its association with gratification (Christenson et al., 1994). Overspending was also related to both comfort and emotional discomfort sub-scales, suggesting that overspending is multi-determined and can serve a number of functions. Thus, it may reduce emotional distress, it is comfortable and easy, and indulges gratification. Entitlement had the highest correlation regarding 'obtaining support from others, but this was not significantly correlated with self-esteem. This is contrary to expectations, but may indicate that individuals with low confidence avoid social contact, whereas individuals with high entitlement scores expect support. It also questions the assumption that requests for support necessarily reflect low confidence and inability to cope.

Interestingly, the item with one of the strongest relationships to frustration intolerance was restricted routines. This was also most highly associated with the comfort sub-scale and indeed could be argued to epitomise the concept of the avoidance of hassle. The strongest correlation with frustration intolerance and particularly related to both emotional discomfort and comfort was the use of medication to cope with distress. In turn, medication was most strongly associated with cognitive avoidance, and to a lesser extent behavioural avoidance, as well as procrastination. It might be argued that the association between medication and frustration intolerance was due to a shared

relationship with negative affect. That is, individuals who are taking medication are also more likely to be more generally distressed. However, it is striking that the partial correlation of Frustration-Discomfort with medication remains significant even when controlling for self-esteem (pr (229) = .29, $p < .001$), and the total HAD score (pr (235) = .23, $p < .001$). This indicates that the relationship is not due to association with negative affect or self-esteem.

Unsurprisingly, achievement frustration was significantly correlated with using work and activity as a means of coping. It also was significantly, although weakly, related to the bulimic and eating restriction items. Shafran, Cooper, and Fairburn (2002) have suggested that bulimia does not just co-exist with perfectionism but is the very 'expression of perfectionism in the domain of eating', and they argue for a definition of perfectionism involving negative self-evaluation. However, the significant correlations between frustration intolerance and restricted eating and vomiting suggests that these beliefs are also implicated in eating disorder, separate from self-evaluation. Comfort and emotional discomfort were most closely associated with eating restriction, but not vomiting. However, achievement was associated with both behaviours, supporting the suggestion that these two behaviours may serve different roles. Thus vomiting may primarily serve in addition to maintain weight targets, whilst restricted eating may also aim to reduce emotional discomfort, as Heatherton and Baumeister (1991) have speculated. This is consistent with the high scores on the 'self-oriented perfectionism' and 'personal standards' perfectionism sub-scales obtained by individuals with anorexia (Bastiani et al., 1995). Both these sub-scales have close similarities with the items on the achievement frustration scale. The association of achievement frustration with overwork also supports the hypothesis that high personal standards can be dysfunctional in other areas. Whilst ruminative worry was significantly correlated with achievement this was also similarly associated with the other frustration intolerance sub-scales.

## 7.5 ANALYSIS OF SELF-HARM

### 7.5.1 PRELIMINARY ANALYSIS

The measures of anxiety and depression, and the Rosenberg Self-esteem Scale, TAS, and the Frustration-Discomfort sub-scales were all normally distributed in the self-harm group. The TAS and the anxiety scale were slightly positively skewed in the non-harming group. The male-female ratio corresponded to the overall ratio for psychology referrals, and there was no significant gender difference between self-harming and other patients ($\chi^2$ (1) = 1.00, ns), but the self-harm group was significantly younger (t (236) = 3.16, $p < .01$).

### 7.5.2 CORRELATIONAL ANALYSIS

Point-biserial correlations between Frustration-Discomfort, the emotional measures, and self-harm category were significant apart from the achievement sub-scale, with self-esteem having the strongest correlation (table 7.5). All variables displayed a linear relationship.

Table 7.5 Biserial correlations between the Frustration-Discomfort, emotional disturbance scales, and self-harm category

| | Self-harm category |
|---|---|
| Total Frustration-Discomfort score | .21*** |
| Emotional discomfort | .25*** |
| Entitlement | .14* |
| Comfort | .20** |
| Achievement | .07 |
| TAS | .23*** |
| HAD anxiety | .27*** |
| HAD depression | .23*** |
| Rosenberg self-esteem | .39*** |

N = 240 (n = 230 self-esteem) ***$p < .001$, **$p < .01$, *$p < .05$

To investigate the overall level of emotional disturbance self-harmers were classified as to whether they had co-existing anger, depression, or anxiety, based on cut-points on these measures. These groups were then compared to similarly classified non-harmers. Self-harmers were found to be significantly more anxious than other anxious patients, ($t(181) = 3.61$, $p < .001$), although anger ($t(121) = 1.18$, ns) and depression ($t(80) = 1.77$, ns) showed no difference. Self-harmers also had significantly lower self-esteem compared to emotionally disturbed non-harmers ($t(209) = 6.10$, $p < .001$). There were substantial differences in the proportion of self-harmers with two or more emotional problems. Thus, 76% of self-harmers had two and 36% had all three problems, compared to 48% and 12% receptively for non-harmers. An overall disturbance score indicated that self-harmers had significantly higher levels of emotional problems ($t(209) = 4.92$, $p < .001$).

Self-harmers had higher emotional discomfort scores and comfort scores ($t(211) = 3.38$, $p < .001$, and $t(211) = 2.21$, $p < .05$), but entitlement or achievement were not higher compared to other emotionally disturbed non-harmers ($t(211) = 0.19$, and $t(211) = 1.53$, ns). As expected there was a strong correlation between entitlement and anger in both self-harming and non-harming groups ($r(52) = .62$, $r(186) = .52$, $p < .001$), but no significant relationship between self-esteem and anger for either group ($r(50) = -.09$, $r(180) = -.10$, ns).

To evaluate the association between self-directed anger and self-harming the three individual Frustration-Discomfort items with self-evaluative themes were analysed: Q(56) personal flaws, Q(33) alone, and Q(2) risk rejection. An interesting difference emerged between the two groups: The three items had substantially higher correlations with anger in the self-harm group compared to non-harmers (table 7.6). Whilst these correlations just failed to reach significance (all $p < .06$) it is notable that, in comparison, the correlations of these items with anger for non-harmers were negligible. Overall, the combined score of these items was significantly correlated with anger in the self-harming group ($r(56) = .37$, $p < .01$) but had no relationship in non-harmers ($r(184) =$

.09, ns). For both groups, these items were significantly related to achievement ($r(56) = .34$, $p < .01$) and entitlement ($r(56) = .44$, $p < .001$).

Table 7.6 Correlations between Frustration-Discomfort items and the TAS for self-harm and non-harming groups.

| | Self-harm n = 55 | Non-harming n = 184 |
|---|---|---|
| Personal flaws | .26 | .12 |
| Alone | .25 | .08 |
| Risk rejection | .25 | -.01 |

A possible explanation of these group differences is that self-harmers have low self-esteem and condemn these flaws as reflecting global personal failure. However, contrary to this, the correlation between self-esteem and these three beliefs was not significant in the self-harm group ($r(56) = -.21$, ns), but was significant in non-harmers ($r(186) = -.48$, $p < .001$). Furthermore, when the variance due to self-esteem was partialled out, the partial correlation between anger and these beliefs remained moderately correlated and little changed from the zero order correlation ($r(48) = .36$, $p < .01$). This suggests that the relationship between anger and the intolerance of personal flaws and rejection, as represented by these items, is independent of the level of self-esteem.

An alternative explanation is that self-harmers are not condemning themselves in terms of absolute levels of self-worth. Rather they condemn themselves for relative failure, for not being good enough compared to a personal standard. If so, then the self-esteem difference score (the difference between negative and positive self-esteem items), but not overall self-esteem, would be negatively correlated with anger. This was found the case. As expected from previous results the difference score was significantly correlated to achievement frustration in both self-harming and non-harmers ($r(50) = -.29$, $p < .05$ and $r(180) = -.25$, $p < .001$ ). However, the difference score was only correlated with anger in the self-harming group ($r(50) = -.27$, $p < .05$ and $r(180) = -.12$, ns). Likewise, the correlation between the difference score and entitlement was substantially stronger in

the self-harm group ($r(50) = -.30$ and $r(184) = -.15$, both $p < .05$). Thus, for self-harmers the greater the discrepancy between what a person believes they should be like and their actual self-evaluation the higher the level of anger.

This raises an important theoretical issue. In descriptions of ego-disturbance, a failure to achieve an absolute standard leads to generalised self-condemnation. However, these results suggest that anger in self-harming is associated with the discrepancy between percieved and ideal self-standards, but not with overall self-esteem. That is, the person does not necessarily believe they are worthless, but rather not good enough. As discussed in chapter five this can be argued to represent intolerance of personal failings, rather than global evaluation of self-worth, are therefore indicative of frustration intolerance. That anger and the self-evaluation items significant correlated with entitlement, rather than with self-esteem, would support this interpretation.

### 7.5.3 LOGISTIC REGRESSION

To examine determine which variables were most predictive of self-harm logistic regression analyses were conducted (table 7.7). These analyses were also used to test the independence of self-esteem and Frustration-Discomfort belief categories in predicting self-harm. Since age was significantly related to self-harming this was controlled in the analyses, with self-harm category the dependent variable.

Table 7.7 Logistic regression analyses predicting self-harm

| | B | SE | Wald $\chi^2$ | p |
|---|---|---|---|---|
| Regression 1 | | | | |
| Age | -.04 | .01 | 9.47 | .002** |
| Emotional discomfort | .05 | .02 | 6.64 | .010** |
| Entitlement | -.01 | .02 | 0.24 | .623 |
| Comfort | .03 | .02 | 1.18 | .181 |
| Achievement | -.02 | .03 | 0.40 | .526 |
| Regression 2 | | | | |
| Age | -.46 | .02 | 8.93 | .003** |
| Anger | .07 | .03 | 7.39 | .007** |
| Anxiety | .13 | .05 | 5.68 | .017* |
| Depression | .10 | .04 | 4.98 | .026* |
| Regression 3 | | | | |
| Age | -0.03 | 0.02 | 3.04 | .081 |
| Self-esteem | -0.17 | 0.04 | 18.18 | .001*** |
| Emotional discomfort | 0.04 | 0.02 | 4.04 | .044* |
| Regression 4 | | | | |
| Age | -0.05 | 0.02 | 10.80 | .001*** |
| Anxiety | 0.10 | 0.06 | 2.74 | .098 |
| Depression | 0.10 | 0.04 | 5.22 | .022* |
| Emotional discomfort | 0.03 | 0.02 | 4.15 | .042* |

N = 228 *** $p < .001$, ** $p < .01$, * $p < .05$

In the first regression, the Frustration-Discomfort sub-scales were entered as a block. The overall model was significant (-2LL = 249.59, $\chi^2$ (5) = 28.66, $p < .001$), with Frustration-Discomfort producing a significant improvement in model fit after accounting for age ($\chi^2$ (4) = 18.55, $p < .001$), but only emotional discomfort was a significant unique predictor of self-harm. Frustration-Discomfort beliefs accounted for an additional 11% of variance (Nagelkerke $R_2$ = 0.18). In the second regression, the emotional variables (anxiety, depression and anger) were entered as a block. The model was significant (-2LL = 245.64, $\chi^2$ (4) = 41.98, $p < .001$), and all the emotional variables were significant predictors of self-harm, accounting for 19% of the variance (Nagelkerke $R_2$ = 0.25). In the third regression, both emotional discomfort and self-esteem were entered. The model was significant (-2LL = 193.94, $\chi^2$ (3) = 45.92, $p < .001$), and both

the belief categories were found to be independent predictors of self-harm, and produced a significant improvement in model fit after controlling for age ($\chi^2$ (2) = 38.85, p < .001). Together, the belief categories accounted for an additional 21% of the variance. Classification tables show an overall success rate of 80%, with 26% of self-harmers correctly predicted. The Hosmer and Lemeshow test ($\chi^2$ (8) = 8.95, p = .35) indicated a good model fit. Lastly, emotional discomfort was entered as a block with depression and anxiety. When controlling for negative affect, emotional discomfort continued to be a significant predictor.

It was suspected that anger would mediate the relationship between self-harm and entitlement. Baron and Kenny (1986) have described the following conditions necessary for the assumption of mediation: (1) the dependent and independent variables are associated, (2) the mediator and dependent variable are associated, (3) that the relationship between dependent and independent variables is significantly reduced when the mediator is controlled. The first two conditions have been satisfied, with entitlement a significant predictor of self-harm ($\chi^2$ (1) = 4.68, p < .05). However, entitlement no longer remains significant when entered with anger, indicating that anger is a mediator between entitlement and self-harm (table 7.8).

Table 7.8 Logistic regression analyses predicting self-harm status from entitlement and anger

| | B | SE | Wald $\chi^2$ | p |
|---|---|---|---|---|
| Age | -.04 | .01 | .7.46 | .006** |
| Entitlement | .01 | .02 | 0.22 | .644 |
| TAS | .07 | .03 | 5.81 | .016* |

### 7.5.4 DISCRIMINANT ITEM ANALYSIS

Independent t-tests were calculated to determine the Frustration-Discomfort items that significantly discriminated between the self-harming groups (table 7.9). Since self-harming was related to age a matched age sample was created by limiting the non-

harming group to fifty years (n = 134), and there was no significant difference in mean age between these groups. Fifteen items were significant. The three highly significant items, Q(29) slipping back, Q(41) emotional control, and Q(57) thoughts all loaded on the emotional discomfort sub-scale. Of the items excluded from the final scale Q(56) personal flaws was highly significant and also loads on the emotional discomfort factor. The two items regarding the need for excitement, Q(21) buzz, and Q(48) excitement were not significant, and neither was Q(72) indulgence or Q(61) gratification delay.

Table 7.9 Discriminative item analysis for self-harming

| Scale item | | Sub-scale | t |
|---|---|---|---|
| 57 | Thoughts | emotional discomfort | 5.21*** |
| 41 | Emotional control | emotional discomfort | 3.62*** |
| 29 | Slipping back | emotional discomfort | 3.94* |
| 71 | Morbid thoughts | emotional discomfort | 2.83** |
| 64 | Quick emotional relief | emotional discomfort | 2.52* |
| 20 | Unfair life | emotional discomfort | 2.47* |
| 14 | Continuing situation | emotional discomfort | 2.29* |
| 25 | Craziness | emotional discomfort | 2.30* |
| 17 | Restriction | entitlement | 2.64** |
| 53 | Let down | entitlement | 2.06* |
| 63 | Disrupted routines | comfort | 3.29*** |
| 18 | Task hassle | comfort | 2.34* |
| 51 | Self-change | comfort | 2.27* |
| 55 | Task obstruction | achievement | 1.99* |
| 38 | Lapse of discipline | achievement | 2.11* |
| 56 | Personal flaws | | 4.09*** |

N = 55/134 ***p < .001, **p < .01, *p < .05

## 7.6 STRUCTURAL EQUATION MODELING

### 7.6.1 INTRODUCTION

The logistic regression analyses had indicated significant relationships between the emotional disturbance, beliefs measures, and self-harm. There are problems with a

regression approach in validating multifaceted constructs (Hull, Lehn, & Tedlie, 1991). In particular, since most multidimensional scales have high correlations between the components, the presence of multicollinearity can lead to instability of estimated coefficients. Regression also does not overcome problems due to differing reliabilities between sub-scales and is less suited to examining the relationship between these scales. As an alternative, structural equation modelling has been increasingly used in scale construction and to assess construct validity. The advantage of this approach is that it enables relationships as a whole to be tested. It is also a vigorous means of assessing construct validity since a-priori models can be tested against competing models.

Structural equation modeling was conducted using the AMOS program (Arbuckle & Wothke, 1999). The adequacy of the models was assessed by a variety of fit indices: The model Chi-square is the most frequently used measure of overall fit. A non-significant $\chi^2$ indicates a good fit, although it cannot be used to compare non-nesting models. Tabachnick and Fidell (2000) suggest that as a rule of thumb for a good fitting model a ratio of $\chi^2$ to the degrees of freedom of less than 2 is required. The comparative fit index (CFI: Bentler, 1990), of which values above .90 are regarded as indicating adequate fit, and above .95 as a good fit (Bentler & Bonett, 1980). The root mean square of approximation (RMSEA: Browne & Cudeck, 1993): A non-incremental fit index representing the discrepancy per degree of freedom. For this, values over .1 should lead to rejection of the model, those from .05 to .08 are acceptable, and values below .05 indicate a close fit to the data. The Tucker-Lewis (1973) Index: This takes into account model parsimony so that an inconsequential path reduces the TLI value, with a TLI score > .90 considered reasonable. The Akaike Information Criterion (AIC; Akaike, 1987) is a relative measure that penalises complexity, with poor fitting and complex models obtaining higher values.

Since self-harming is split into dichotomous groups it might be argued to violate the assumptions of normality. However, the Maximum likelihood method used in AMOS is robust to departures from normality. The ratio of observed variables to cases is at least

27:1 meeting acceptable criteria. A sample size of above 200 is usually adequate with a medium model size (Hair et al., 1998).

### 7.6.2 MODEL SPECIFICATION

The regression analysis had indicated that entitlement, emotional intolerance, and comfort were significantly correlated with self-harm, with both self-esteem and emotional discomfort unique predictors. However, the interaction between these variables was unclear. To explore this, five models were tested based on the theoretical and empirical literature outlined in the review. This literature suggests that emotional intolerance, self-esteem, anxiety/tension, and anger are central variables. Therefore, all models included these variables, with entitlement fully mediated by anger. Since age was significantly related to self-harm and to self-esteem this was also included in the model. In model A, depression and anxiety fully mediate between self-esteem and self-harm, and between emotional discomfort and self-harm (figure 7.1). In Model B, self-esteem is directly related to self-harm, as well as being partially mediated by depression (Figure 7.2). In model C self-esteem continues to be partially mediated by anxiety but depression is not included as a predictive variable (figure 7.3). Model D is the same as model C except that self-esteem also has a direct path to anger (figure 7.4). Model E was the same as model C excepting that comfort was added with a direct path to self-harm and a partial mediated relationship through anxiety. The graphical presentation of these models in figures 7.1 to 7.5 show standardised regression weights and squared multiple correlations, representing the amount of explained variance for each exogenous variable.

### 7.6.3 MODEL COMPARISON

Fit statistics for each of the model are shown in table 7.10. Model A was clearly an unacceptable fit to the data, with a significant $\chi^2$, unacceptable discrepancy ratio, and RMSEA, although all path coefficients were significant. This indicated that the direct

relationship between self-esteem and self-harming could not be ignored. Model B did have a direct path from self-esteem to self-harm and this path coefficient was significant (ß = -.29, p = .001), whereas the path from depression to self-harm was not (ß = .36, p =.586). Overall however, model B was an inadequate fit to the data. Models C and D excluding depression did show good fits to the data. The AIC values also showed a marked decrease indicating a more parsimonious structure. Since these two models are nested, they can be compared with each using the $\chi^2$ difference test. In this test, the less parsimonious model $\chi^2$ is subtracted from the other $\chi^2$ value, and if the additional constraints of the more complex model (that is one with less degrees of freedom) are worthwhile then the new Chi-square value will be non-significant. This test indicated that model C was statistically the better model compared to model D ($\chi^2$diff = 1.67, df = 1, ns). This suggests that there is no direct relationship between self-esteem and anger. Whilst Model E also a reasonable fit to the data, the regression paths from comfort to self-harm and to anxiety were not significant.

Table 7.10 Tests of mediation: Fit statistics

| Model | Chi-square | Df | $\chi^2$/ df | Sig | TLI | RMSEA | AIC |
|---|---|---|---|---|---|---|---|
| Model A | 78.38 | 15 | 5.23 | 0.00 | .964 | 0.132 | 136.4 |
| Model B | 63.66 | 14 | 4.55 | 0.00 | .970 | 0.121 | 123.7 |
| Model C | 11.33 | 10 | 1.13 | 0.33 | .999 | 0.023 | 61.3 |
| Model D | 9.66 | 9 | 1.07 | 0.38 | .999 | 0.017 | 61.7 |
| Model E | 20.55 | 12 | 1.71 | 0.06 | .994 | 0.054 | 84.6 |

The further possibility was examined that emotional discomfort and entitlement were directly related to self-harm in addition to being partial mediated by the emotional variables. However, the path coefficients for both entitlement and emotional discomfort to self-harm were not significant (ß = -.04, p = .606 and ß = -.03, p = .706), and the overall model essentially unchanged. This indicated that the two frustration intolerance sub-scales were fully mediated by the emotional disturbance variables.

In summary, the preferred model C was one in which self-harm is related to entitlement and emotional discomfort, and these beliefs were mediated by anger and anxiety respectively. Self-esteem was partially mediated by anxiety as well as having a direct relationship to self-harm. There was no significant relationship between anger and self-esteem, and depression was not found to be a mediating variable.

FIGURE 7.1 Self-harm structural equation model A.
Showing standardised parameter estimates with significance levels determined by critical ratios
(***p < .001, **p < .01, *p < .05)

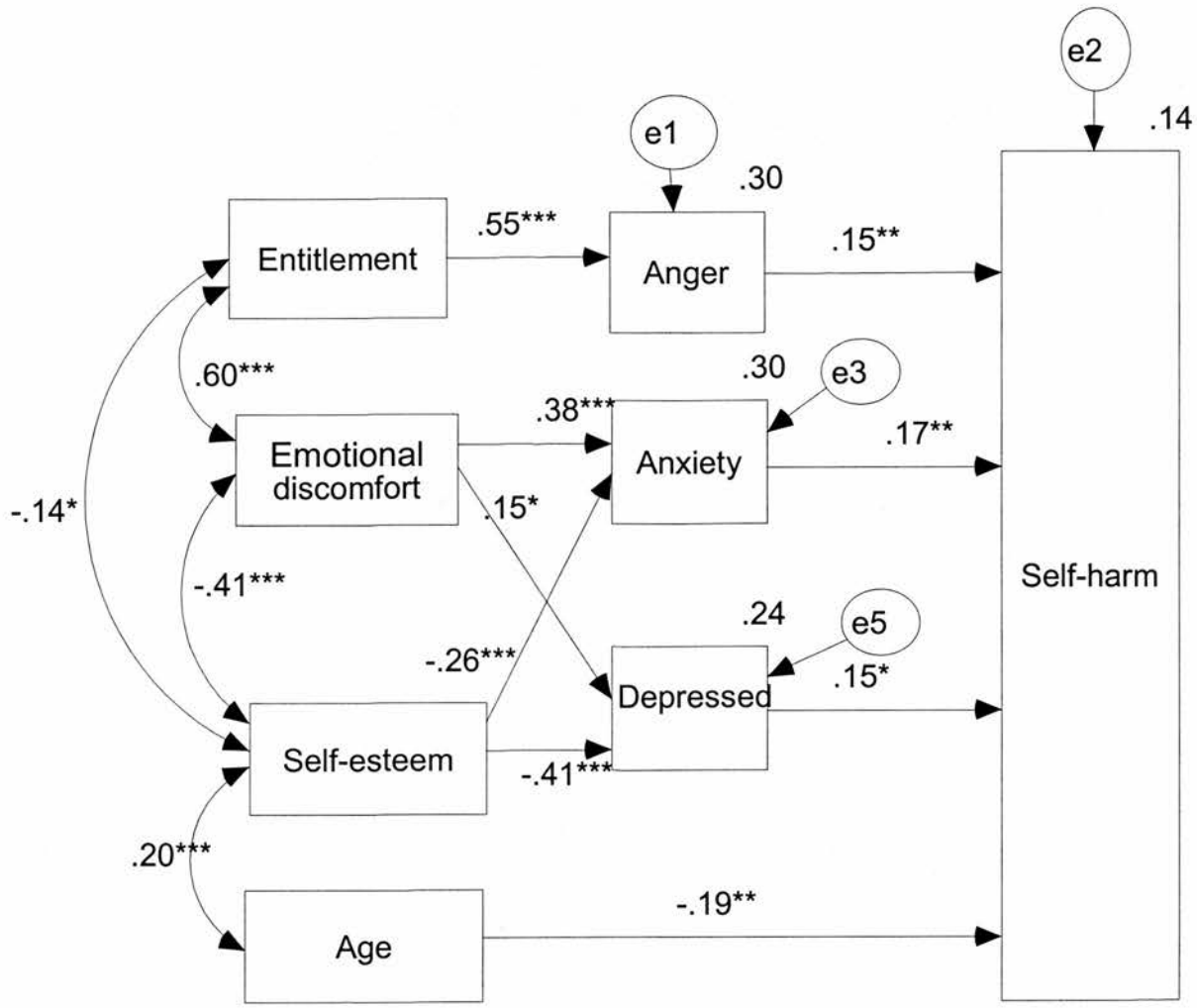


FIGURE 7.2 Self-harm structural equation model B.
Showing standardised parameter estimates with significance levels determined by critical ratios
(***p < .001, **p < .01, *p < .05)

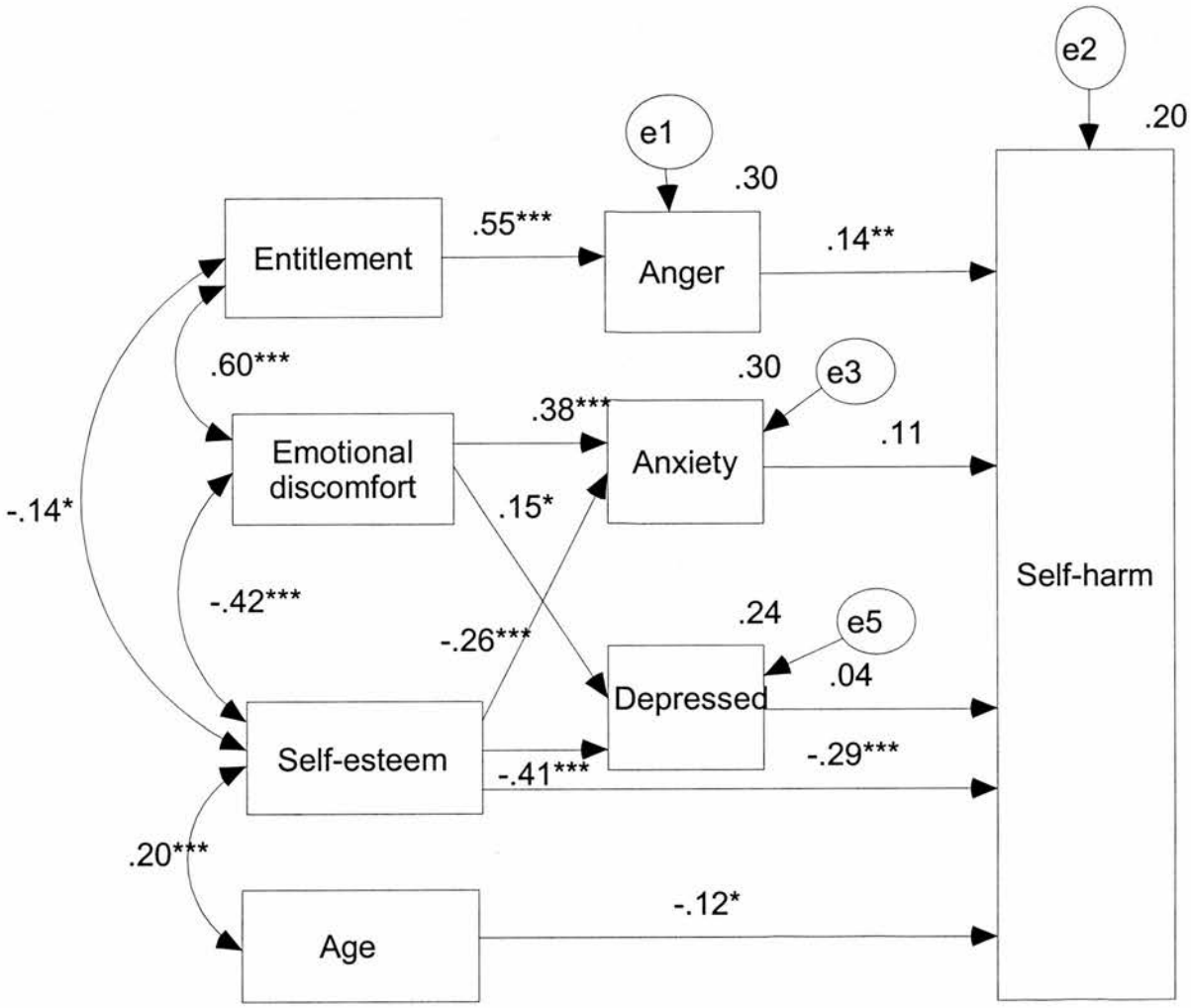


FIGURE 7.3 Self-harm structural equation model C.
Showing standardised parameter estimates with significance levels determined by critical ratios
(***p < .001, **p < .01, *p < .05)

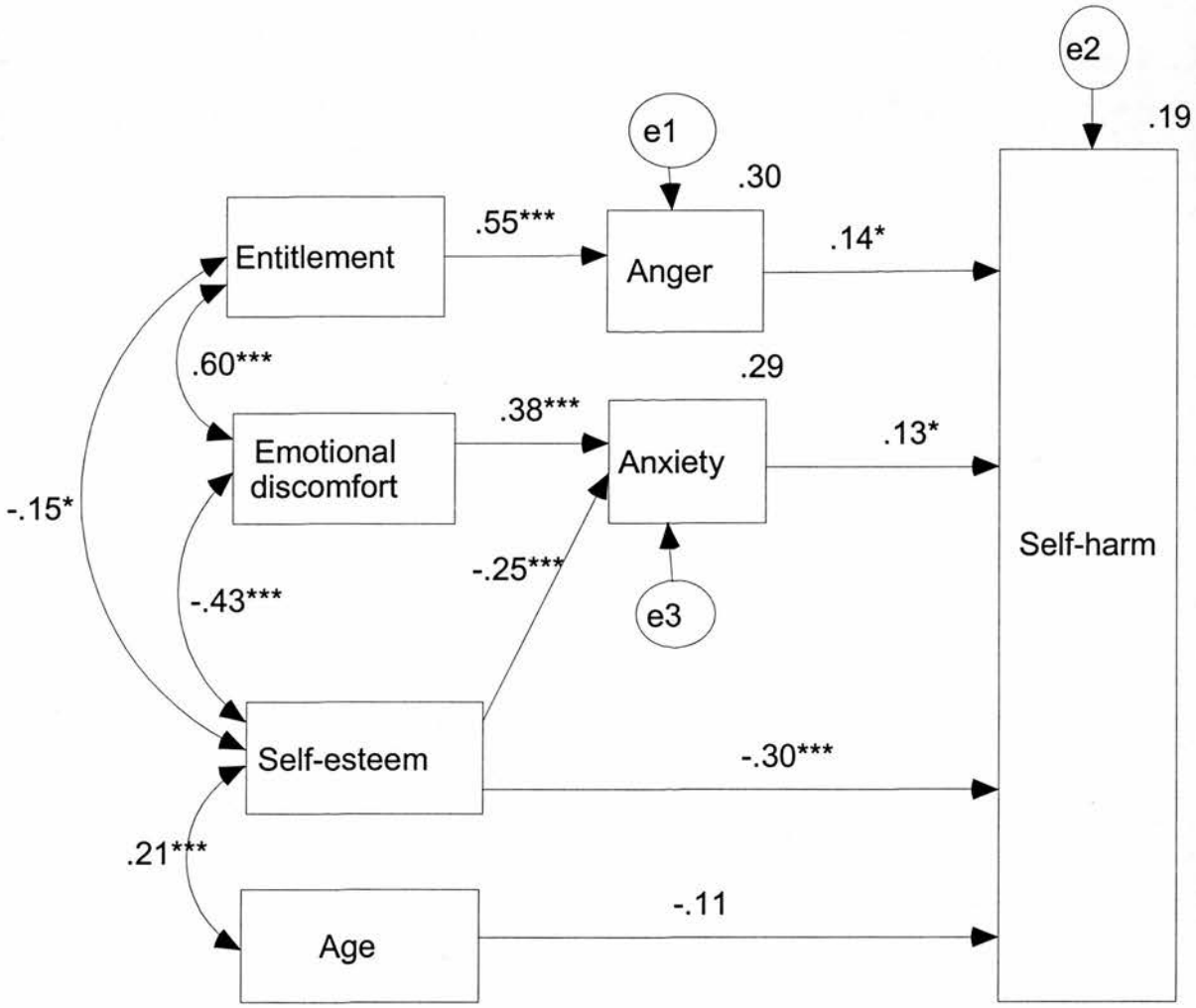


FIGURE 7.4 Self-harm structural equation model D.
Showing standardised parameter estimates with significance levels determined by critical ratios
(***p < .001, **p < .01, *p < .05)

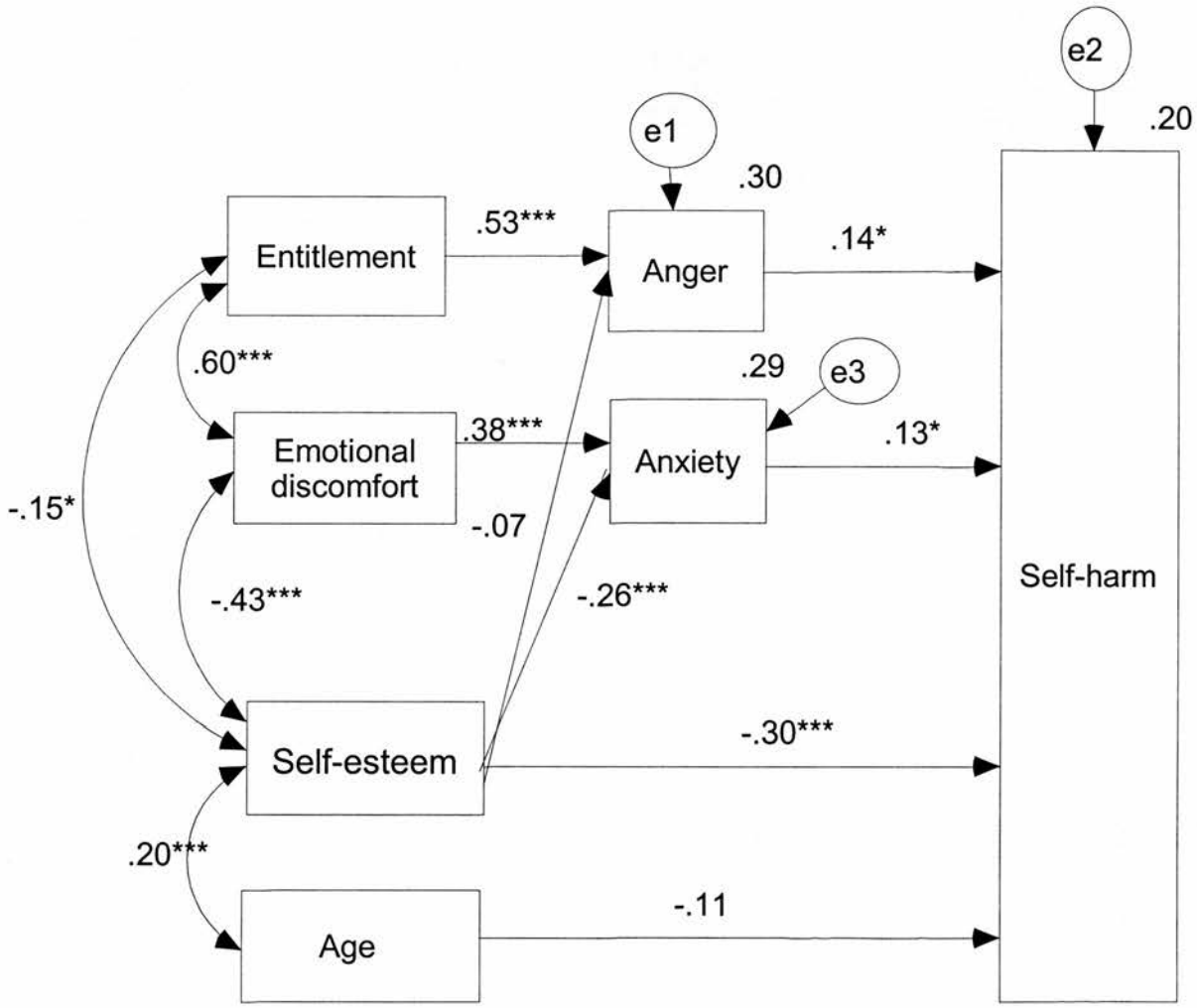
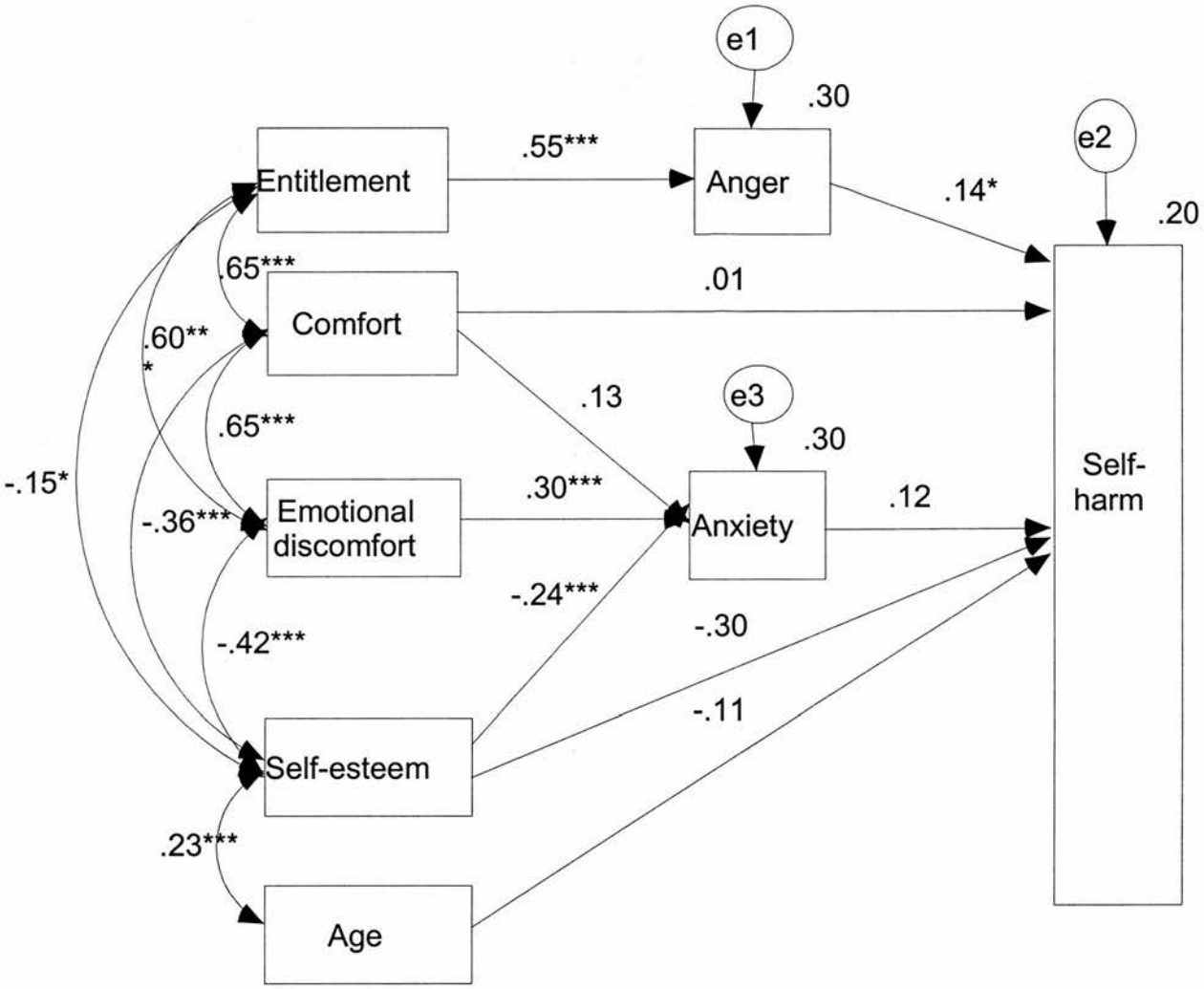


Figure 7.5 Self-harm structural equation model E.
Showing standardised parameter estimates with significance levels determined by critical ratios
(***p < .001,**p < .01, *p < .05)



## 7.7 DISCUSSION

This study provides further evidence of the usefulness of distinguishing between the two categories of belief, and the separate dimensions of frustration intolerance. This was supported by the differential relationships these had with the range of self-control problems. The 'dysfunctional coping' item most strongly correlated with frustration intolerance was reliance on medication, and this was significant even when controlling for levels of negative affect. There is evidence that medication use can impede long-term treatment. For example, although patients suffering from PTSD and using benzodiazepines were less likely to drop out of therapy, they were also less likely to improve (Minnen, Arntz, & Keijers, 2002). This is consistent with the results presented in chapter nine showing that both medication and comfort beliefs were related to greater numbers of treatment sessions. It is also consistent with the hypothesis that comfort beliefs prevent individuals making changes in the background situations that trigger disturbance, therefore increasing the chances of relapse (DiGiuseppe, 1998). This might explain why the presence of other 'impulsive' problems have been found to be a strong predictor of poor long-term prognosis, for instance in eating disorders (Sohlberg, 1989).

As expected, total Frustration-Discomfort scores were significantly related to both cognitive and behavioural avoidance. Interestingly, the second highest correlation after medication was with routine. This would be consistent with the suggestion that many long-term problems are associated, not with dramatic behavioural disturbance, but a general avoidance of commitment that reduces life satisfaction (DiGuiseppe, 1991). Thus, Ellis (e.g. Ellis & Bernard, 1985) has proposed a number of guidelines that enhance psychological health, including commitment to goals, risk-taking, and long-range hedonism. There were differences between the types of avoidance: Medication, bulimia, and self-harm were only associated with cognitive avoidance, where as comfort eating and routines were associated with behavioural avoidance. This is consistent with the evidence that bulimics are more likely to use avoidant coping strategies (Cattanach

& Rodin, 1988) particularly thus aimed at reducing personal awareness (Heatherton & Baumeister, 1991).

The results also support the proposal that different types of dysfunctional coping are related to different aspects of frustration intolerance. Thus in regard to self-harm, emotional discomfort was the most strongly associated sub-scale. However, self-esteem emerged as the strongest overall predictor accounting for 24% of the variance compared to 10% attributed to emotional discomfort. The failure of the model in which depression was a mediating variable is consistent with other findings showing no relationship between depression and self-harm (Kent et al., 1997). However, it may also reflect the limitations of the HAD depression scale which focuses on hedonistic aspects of depression rather than self-depreciation. Thus, the path between self-esteem and self-harming may represent this aspect of self-disgust, as Power and Dalgleish (1997) have argued. In addition to this path, both emotional discomfort and self-esteem are associated with self-harm by way of anxiety. Clearly, anxiety may result from threats to self-esteem but secondarily involve emotional intolerance beliefs. This is consistent with other studies indicating that tension is the primary affective pathway for self-harm (Haines & Williams, 1997; Herpetz, 1995).[1]

The other major affective pathway was that of anger. There was no relationship between anger and emotional discomfort, suggesting that emotional intolerance concerned tension rather than anger. This is compatible with evidence regarding the experience of anger as an empowering emotion and one that individuals wish to maintain rather than remove (DiGiuseppe, Tafrate, & Eckhardt, 1994). It is unclear whether individuals who self-harm have lower emotional toleration than other patients rather than, as has been

[1] This interpretation is supported by a separate study which used the short revised Frustration-Discomfort scale to investigate adolescent self-harming (C, Hewitt, 2001). This found that, regarding frustration intolerance, only the emotional discomfort sub-scale was significantly associated with self-harming. Measures of anger and disgust were also higher in self-harmers. Emotional discomfort did not remain significant when controlling for depression, using the beck depression inventory. This measure, compared to the HAD, includes many items relating to self-condemnation. This suggests, at least in adolescents, that emotional discomfort is largely associated with the distress related to this measure.

suggested, higher amounts of distress (Linehan, 1993). The results indicated that the self-harm group was significantly more anxious and was more likely to suffer from a combination of disturbed emotions. However, in the logistic regression, when depression and anxiety were controlled, emotional discomfort continued to be significant. This suggests self-harming individuals did have higher levels of disturbance but, in addition, they were also less tolerant of these emotions.

There was also no clear evidence of a relationship between self-esteem and anger in self-harming. Rather, anger was strongly associated with entitlement beliefs. The implication for clinical intervention is that assuming increased self-acceptance will also reduce levels of anger may be wrong. Rather, anger has an independent role and requires separate intervention. Having said this, there was a indication from the self-esteem difference score that some beliefs related to the self do have an association with anger. These appeared related to beliefs regarding not being good enough, rather than absolute low self-esteem. However, the assessment of this relationship is limited by the lack of detailed framework of ego-disturbance beliefs (Neenan & Dryden, 1999).

The assessment of the role of impulsiveness proposed by some theories clearly rests on the definition of this concept, which has been somewhat nebulous. The four items regarding gratification failed to discriminate between the groups. However, two achievement items, self-discipline and task obstruction, were significant discriminators, although the content of these items could be said to be in opposition to the concept of impulsiveness. Whilst achievement was not significantly correlated with self-harm the relationship may have been attenuated by the small number of items on this sub-scale. Certainly, it would be interesting to explore these relationships using the revised achievement sub-scale. The ambivalence towards change expressed by many individuals with anger and self-harming is reflected in that the intolerance of self-change item was a significant discriminator.

There are a number of limitations to this study. Certainly, the use of single questions to measure self-control behaviour was inadequate for detailed assessment of these complex problems. In retrospect, Rosenbaum's (1980) Self-control Schedule containing items assessing the use of cognition to control emotion, problem solving, self-efficacy, and delay of gratification, may have been a more appropriate measure. This scale has been found to correlate with irrational beliefs on the Jones (1968) IBT, with the strongest association being with frustration reactivity sub-scale, and has the benefits of established validity and reliability. However, it largely focuses on positive coping skills rather than dysfunctional behaviour, and does not address problems such as self-harming, eating problems, and overspending. A second limitation was that the present scale did not make a clear distinction between the use of potentially dysfunctional methods of coping and those that were actually perceived as causing problems. This may be one reason why the expected association between alcohol use and frustration intolerance did not emerge. For instance, Camatta & Nagoshi (1995) found that a measure of irrational beliefs significantly predicted alcohol problems but not alcohol use.

Combining different types of self-harm into one question may have reduced the relationship of specific beliefs and aspects of this behavior. For instance, intolerance of emotional disturbance may be more associated with cutting than with overdosing (Sidley, 1998). As regards the structural model of self-harm, it is important to remember that the meaningfulness of the results is dependent on the adequacy of the model itself, and the variables included (Quintana & Maxwell, 1999). It should also be noted that causal paths cannot be specified on the basis of cross-sectional designs, and it is likely that the relationship between emotions and beliefs may not be entirely directional but interactive. Lastly, the relatively small numbers of individuals in the self-harm group makes the conclusions drawn from this study tentative.

# CHAPTER EIGHT

# PROCRASTINATION

## 8.1 INTRODUCTION

Procrastination exemplifies the type of self-defeating behaviour assumed to be associated with frustration intolerance. Indeed, Ellis and Knaus (1977) suggest that frustration intolerance beliefs are almost invariably associated with procrastination, either in a secondary or primary role, and that low frustration tolerance 'constitutes the main and the most direct cause of procrastination'. That is, people avoid tasks because of the belief they shouldn't have to do uncomfortable things and that they can't tolerate the effort and discomfort involved. Self-worth beliefs, as the other main category of disturbance in REBT, are also assumed to contribute to procrastination. As such, self-acceptance is dependent on achieving arbitrary criteria for success and approval, leading to fear of failure and perfectionistic standards. Secondary problems associated with low self-esteem may arise when individuals condemn themselves for being procrastinators. Likewise, secondary problems can also involve Frustration-Discomfort intolerance, as with the intolerance of anxiety resulting from threatened self-esteem.

Although REBT has emphasised the central role of low frustration tolerance, research in general has tended to focus on self-esteem as the primary cause of procrastination (e.g. Ferrari, 1991a; 1994). Results do show a relationship between the Rosenberg Self-Esteem scale and measures of procrastination, although correlations are only low to moderate (Beswick, Rothblum, & Mann, 1988; Ferrari, 1991a). Explanations for this association have varied. Burka and Yuen (1983) suggest that procrastination is a way of protecting self-esteem based on achievement success, in that lack of preparation can serve to excuse failure. Such self-handicapping strategies have been described in a number of areas (Baumeister & Scher, 1988), including preparation for exams (Tice & Baumeister, 1997). However, it would be expected that such strategies would be

connected to low self-efficacy, yet self-efficacy regarding academic tasks is unrelated to procrastination (Milgram, Marshevsky, & Sadeh, 1995). Furthermore, self-handicapping is not necessarily a function of low self-esteem or fear of failure, and individuals with high self-esteem may use self-handicapping to enhance self-presentation (Tice, 1991). Thus, Lay, Kneish, and Zanatta (1992) have suggested that self-handicapping and procrastination are different types of behavior, with handicapping representing a rational trade off between self-presentation and achievement. Indeed Mayer (2000) found no evidence for self-handicapping but rather that individuals would procrastinate if this was strategically useful.

Social evaluation is often associated with increased anxiety and the aversiveness of anxiety itself may be central in motivating procrastination (McCown & Johnson, 1991). In a laboratory study, procrastination depended both on the availability of enjoyable alternatives and the belief that distracting activity would improve the persons mood (Tice, Bratslavsky & Baumeister, 2001). All participants were found to procrastinate to some extent, however individuals in the experimental condition, which involved both distraction and a belief in improved mood, hardly engaged with the task at all. The authors argue that this indicates procrastination is not simply the indulgence of immediate gratification but an attempt to manage negative affect. Thus, feeling bad did not lead to procrastination by reducing task performance, self-efficacy, or from a desire for self-control, but because it switched priorities to obtaining immediate relief from negative emotions. However, other evidence regarding the role of anxiety has been contradictory. A number of studies have shown no relationship between state anxiety and trait procrastination prior to examinations (Lay, Edwards, Parker, & Endler, 1989; Lay & Silverman, 1996). Research also shows that phobic patients are willing to pay eight times more than procrastinators to avoid a task, suggesting that procrastinators and anxiety disordered patients are not comparable on levels of emotional aversiveness (Ferrari, Johnson, & McCown, 1995).

One explanation for this contradictory evidence is that procrastinators are not a homogeneous group. Thus, Solomon and Rothblum (1984) found two factors on their PASS scale that accounted for most of the variance in self-reported reasons for procrastinating. These were labelled 'task aversiveness' and 'fear of failure'. Fear of failure was the largest factor, accounting for 49% of the variance. However, whilst task aversiveness accounted for only 18% these items were most frequently endorsed, suggesting that fear of failure is a smaller but more distinct sub-group. The two groups also had quite distinct relationships with other variables. Fear of failure was significantly related to anxiety and low self-esteem. In contrast, task aversiveness had no association with anxiety and only a very low correlation with self-esteem ($r = .13$). Therefore, Rothblum (1990) suggests that the relationship between low self-esteem and fear of failure procrastination is mediated by evaluative anxiety. This acts as a discriminative cue for avoidance, with the reduction of anxiety in turn reinforcing procrastination. However, caution is required before assuming fear of failure is the primary cause of procrastination. Schouwenburg (1995) found that only for individuals high on both fear of failure *and* trait procrastination were the two significantly related. Fear of failure appeared to be relevant only in a particular sub-set of procrastinators and that for most individuals it is not the main cause (Schouwenburg, 1992). Thus, anxiety may only play a significant role in a particular sub-group of individuals, those with fear of failure beliefs. Depressed mood, on the other hand, has been found to have a significant relationship with both fear of failure and task aversiveness (Solomon & Rothblum, 1984). Indeed, Lay (1995) found a stronger relationship between procrastination and 'dejected' emotions than 'agitated' emotions. However, although he argues low mood is more characteristic of procrastination than anxiety, he suggests this is a consequence of procrastination rather than a cause.

Perfectionism and procrastination have also often been linked (Burns, 1989; Ellis & Knaus 1977), although at first sight they appear to be opposing tendencies. For example, Baumeister, Heatherton, and Tice (1994) suggest that the setting of unrealistically high goals is likely to increase chances of failure, and consequently greater negative affect

and avoidance of tasks. However, the evidence of an association using broad measures of procrastination has been inconsistent, possibly indicating a more complex relationship (Flett, Hewitt, & Martin, 1995). Thus, Frost et al. (1990) found no significant relationship between overall scores on their Multidimensional Perfectionism Scale and procrastination frequency on the PASS, although they were associated with 'procrastination problems'. Examining the six perfectionism sub-scales, they found that 'concern over mistakes' and 'doubts' significantly correlated with procrastination problems but not frequency. 'Parental expectations' and 'criticism' were more weakly related to both frequency and problems. Finally, both 'personal standards' and 'organisation' had no correlation with problems a significant *negative* correlation with frequency. The PASS fear of failure scale had a significant positive relationship with all sub-scales, except organisation, and was highest on 'Concern over mistakes' and 'doubts'. Task aversiveness was positively related to all sub-scales, except organisation and personal standards. Likewise, Stober (1998) found procrastination was correlated with 'Concern over mistakes'/'doubts' but not with 'parental expectations'/'criticism' or 'personal standards', and was negatively correlated with 'organisation'. Studies using Hewitt and Flett's (1989) Multidimensional Perfectionism Scale have also produced similar findings. Of the three sub-scales: self-orientated, other-orientated and socially-prescribed perfectionism, only socially-prescribed perfectionism was significantly correlated with PASS frequency and problem scores (Flett, Blankstein Hewitt, & Koledin, 1992). Socially-prescribed perfectionism was also most strongly related to the fear of failure factor with task-aversiveness having almost zero correlation with all three perfectionism scales. Socially-prescribed perfectionism has in turn been associated with fear of negative evaluation, need for approval, and low self-esteem (Flett, Hewitt, Blankstein, & O'Brian, 1991; Stumpf & Parker, 2000).

This suggests that 'fear of failure', and the perfectionism sub-scales correlated with this, are linked by their association with self-evaluation. Indeed, the concept of perfectionism has often been discussed and defined in terms of critical self-evaluation (Frost et al., 1990). However, REBT theory would posit that perfectionism is involved with the

domains of both self-worth and frustration intolerance. Indeed, it is has been argued that the essential feature of dysfunctional perfectionism is avoidance of negative consequences, not just those related with self-evaluation (Terry-Short et al, 1995). However, this would not explain the absence of a relationship between high standards and procrastination. One possible explanation is that the high standards items on the perfectionism scales tend to be phrased in terms of positive preferences rather than as absolute demands. REBT theory proposes that only the latter is associated with dysfunctional behaviour. Indeed, there is evidence that interventions aimed at reducing excessively high priorities placed on activities, such as academic writing, reduces procrastination (Boice, 1989). Thus, perfectionistic achievement goals may lead to problems because of unwilling to tolerate sub-optimum work, independent of issues of self-evaluation. This points to the need for an assessment scale measuring intolerance of frustrated high standards independent from self-evaluation.

Items on Solomon and Rothblum's 'task aversiveness' scale are similar in concept to aspects of frustration intolerance, particularly demands for comfort. In this regard, Milgram, Marshevsky, and Sadeh (1995) have found that task aversiveness, rather than fear of failure, was most strongly related to task delay. Thus, individuals are more likely to procrastinate on academic tasks perceived as boring or difficult and on unpleasant routine everyday tasks (Milgram, Srolof, & Rosenbaum, 1988). Similarly, procrastinators prefer tasks involving less effort (Lay, 1990). However, it is the intolerance of discomfort, not just discomfort itself, that is central to the REBT model. Thus, whilst most individuals prefer to avoid discomfort it is the intolerance of this despite longer-term consequences that is characteristic of irrational beliefs. This intolerance arises from irrational beliefs encapsulated as 'I can't stand it, I shouldn't have to tolerate such discomfort or deprivation'. The REBT model is distinguished from other cognitive theories in focusing primarily on these absolute evaluations rather than just the appraisal of task difficulty or self-efficacy. Thus, procrastinators tend to rate tasks as more aversive compared to non-procrastinators but this is unrelated to objective academic performance (Lay, 1992).

It is therefore important to distinguish between functional and dysfunctional procrastination (Ferrari, 1993). In this respect, Ellis and Knaus (1977) describe legitimate reasons for delay, including awaiting more information or more favourable conditions. Although anxiety may be an unhealthy consequence of procrastination, defining procrastination just in terms of distress (e.g. Bridges & Roig, 1997) is also problematic since procrastination may reduce short-term anxiety. The definition of Ellis and Knaus (1977) is preferable, as the needless delay of activities it has been decided are best carried out. However, it is important to note that the desirability of immediate over more delayed rewards is a common feature of animal as well as human behaviour (Rachlin, 1995). Therefore, it might be expected that some degree of procrastination would be a universal experience. Thus, the problem is not that procrastination occurs, but why it continues to occur when it leads to difficulties the person wishes to avoid. Clearly, some individuals will choose to delay tasks because they *prefer* other short-term options, or because the consequences of delay are not sufficiently onerous. Therefore, the definition of dysfunctional procrastination should refer not just to task delay, or the choice of immediate reward, but behaving as such *despite* significant long term negative consequences. This is consistent with recent definitions of irrational beliefs that focus on their self-defeating consequences for personal goals. That procrastination is not necessarily problematic or dysfunctional is perhaps reflected in the lack of relationship between concerns about procrastination and its frequency (Milgram, Gehrman, & Keinan, 1992), and procrastination and academic performance (Solomon & Rothblum, 1988; Beck, Koons, & Milgrim, 2000). For these reasons, the PASS problem scale may be more indicative of underlying irrational beliefs than PASS frequency. Similarly, it may be that only high procrastination scores will reflect dysfunctional behaviour (Ferrari, 1994).

Procrastination is also associated with other behaviours conceptually related to frustration intolerance. Thus, procrastination was significantly correlated with Rosenbaum's (1980) self-control scale, which measures the ability to cope with a range of unpleasant tasks (Ferrari & Emmons, 1995). Further, dysfunctional impulsiveness,

characterised by careless responding and disorderliness, is highly correlated to avoidant procrastination (Ferrari, 1993), whilst functional impulsiveness (Dickman, 1990), characterised by risk taking and enthusiasm, is not. Procrastination has also been linked with oppositional behaviour resulting from hostility and resentment. Such behaviour is characteristic of passive-aggressive personality, the criteria for which specifically refer to procrastination and non-completion of tasks. Whilst acknowledging that hostility based procrastination may occur, Ellis and Knaus (1977) suggest this is infrequent. Nevertheless, they also note the close association of anger with frustration tolerance beliefs, particularly regarding fairness. Consistent with this, Ferrari et al. (1995) did find a significant, although low correlation ($r = .19$) between anger and procrastination. Milgram et al. (1988) also noted an association between 'covert negativism', resentful coercion, and everyday procrastination. Ferrari and Emmons (1994) found a very low but significant relationship between revenge and procrastination, although this was not replicated in a second sample. There was also an association, again relatively low, between just world beliefs and procrastination. Lastly, hostility has also been considered important dysfunctional characteristic of Type A behaviour, which itself has been associated with some aspects of procrastination (McCown, Johnson, & Petzel, 1989).

The model of procrastination proposed by Ellis and Knaus (1977) was based on REBT theory rather than empirical evidence. Research regarding cognitive beliefs in procrastination, and specifically frustration intolerance, is limited. Ferrari and Emmons (1994) found no relationship between irrational beliefs, as measured by the Irrational Beliefs Inventory (Newark et al., 1973) and procrastination. Likewise, Beswick, Rothblum, and Mann (1988) found an almost zero correlation between a behavioural measure of procrastination, the time taken to submit a paper, and a measure of irrational beliefs (Ellis Scale of Irrational Cognitions; Macdonald, & Games, 1972). The correlation with self-reported procrastination was significant but small, and multiple regression analysis indicated that self-esteem accounted for most of the variance and irrational beliefs very little. However, Solomon and Rothblum (1984) did find a significant correlation between total procrastination scores on the PASS and the Ellis

Scale. Similarly, research on the relationship between perfectionism and low frustration intolerance has also been inconsistent, Thus, Flett, Hewitt, Blankstein, and Koledin (1991), using the Irrational Beliefs Test (Jones, 1969), found frustration intolerance specifically associated with self-orientated perfectionism. However, a further study using the Survey of Personal Beliefs (Demaria et al., 1989) produced different findings, with self-orientated perfectionism correlated to demandingness.

A major limitation of these studies is the use of inadequate measures of irrational belief. Both of these scales simply sum responses to Ellis' original eleven examples of 'irrational beliefs'. Scales employing such simplified and outdated belief statements do not reflect current theory and are poor measures of irrational cognition. More importantly, they view irrational beliefs as a unidimensional construct failing to adequately distinguish between self-worth and frustration intolerance. A study by Bridges and Roig (1997) did aim to rectify this by using a multi-dimensional scale, the Irrational Beliefs Inventory (Koopermans, Sanderman, Timmerman, & Emmelkamp, 1994). However, this scale uses pooled items from older scales and therefore lacks a cohesive theoretical framework and continues to reflect outdated definitions of irrational belief. Nevertheless, they did find that 'problem avoidance', the sub-scale conceptually closest to frustration intolerance, was the only one to significantly correlate with procrastination.

This review suggests that a number of Frustration-Discomfort sub-scales may be involved in procrastination. REBT theory points to the comfort sub-scale being most associated with procrastination and task aversiveness. Likewise, emotional discomfort may be involved in secondary problems, with intolerance of anxiety arising from either threats to self-worth or to future comfort. The possible role of anger and resentment in procrastination would implicate the entitlement sub-scale, since this is a significant predictor of anger independent of self-esteem. The separation of entitlement into gratification and fairness sub-scales, in the revised scale, also enables separate evaluation of these beliefs. REBT theory highlights the importance of short-term

hedonism and demands for immediate gratification, and excitement in a range of dysfunction, including procrastination (Ellis & Knaus, 1977). However, these terms are used very generally to describe many different aspects of frustration and discomfort intolerance, and it is unclear what role the pursuit of positive gratification itself plays in procrastination. Lastly, evidence links achievement/perfectionistic demands with procrastination. However, the strongest relationship has been with sub-scales, such as socially prescribed perfectionism, most associated with self-evaluation. Perfectionism sub-scales related to high-standards have either had no relationship, or a negative relationship, with procrastination. However, as discussed in chapter two, it is unclear how far these scales are representative of frustration intolerance achievement beliefs, or whether they are assessing adaptive preferences for achievement.

## 8.2 METHOD

### 8.2.1 DESIGN AND PARTICIPANTS

A correlational, cross-sectional design was employed. One hundred and seventy-five psychology undergraduate students completed questionnaires as part of their courses in abnormal psychology. Data was taken from both the preliminary scale study and the revised scale study, which is described in chapter 10. Two students, one from each study, failed to return all sections of the questionnaires. There was one outlier (708), with very low scores across all scales suggestive of careless responding. These cases were excluded from further analysis, leaving one hundred and seventy-two: Eighty-six from the preliminary Frustration-Discomfort Scale study and eighty-six from the revised scale study.

### 8.2.2 MEASURES

The preliminary or the revised Frustration-Discomfort Scales were completed by the respective groups of students. Students in the revised scale study also completed the Rosenberg Self-esteem Scale. In addition, the Procrastination Assessment Scale-Students was completed by all students (PASS; Solomon & Rothblum, 1984). The PASS is the most commonly used measure of academic procrastination. There are two sections, which were modified for the present study. The first part assesses in six areas the frequency of procrastination and the degree to which this is a problem. Normative data indicate the first three areas, referring specifically to academic tasks, are the most relevant, and in this study only these questions were included. The change from rating 'anxiety' to rating 'problems' resulting from procrastination had confounded affective and behavioral responses (Rothblum, Solomon, & Murakami, 1986). Therefore, following the advice of the authors the original 'problem' rating was used.[1]The second part of the scale asks students to rate reasons for procrastinating on an essay. Twenty-six items cover thirteen types of motivation including task aversiveness/frustration intolerance, evaluation anxiety, and self-confidence. Alpha reliability has been reported for both frequency (.71) and reasons (.81) and the scale has been demonstrated to be a valid measure of academic procrastination in numerous studies (e.g. Brownlow & Reasinger, 2000).

### 8.2.3 PROCEDURE

The results from both versions of the Frustration-Discomfort Scale were separately analysed, enabling the relationship between these and procrastination to be validated across both measures. The combined data of 172 students was also used to investigate the factor structure of the PASS scale. This was thought necessary because Solomon and Rothblum (1984) original study had a number of methodological weaknesses. Firstly, given the multidimensional nature of the scale, the decision regarding the number of

factors to retain is crucial in determining the final factor structure. However, their reliance on an eigenvalue greater than one criterion is likely to lead to the inclusion of irrelevant and unstable factors (Comrey, 1978). It has been recommended that other methods, such as the Scree test, are also employed (Kline, 1994). The suspicion that too many factors were included is supported by the fact that of the seven factors just two accounted for most of the variance: 'Fear of failure' had 49.4% and 'task aversiveness' 18% of the variance. Unfortunately, the variance of the other factors was not reported, although all had eigenvalues below 1.5. This suggests that a two or three-factor solution might have been more appropriate. A second weakness is that, although reliability data is lacking, the study did indicate that many of the items had very low endorsement, with twelve items having less than 10% of replies in the two highest scoring categories. Such skewed frequency distributions are very likely to distort the correlation matrix and the eigenvalue criterion (Comrey, 1978).

## 8.3 RESULTS

## 8.4 PROCRASTINATION FREQUENCY AND PROBLEM SUB-SCALES

### 8.4.1 PRELIMINARY ANALYSIS

Whilst procrastination on some activities is clearly commonplace, the problems resulting from this are less pronounced (table 8.1). The high level of procrastination on reading assignments in the present study probably reflects differences in course requirements for American students. Defining generalised procrastination as high scores (4 or 5) on exams and essays 34.9% of students frequently procrastinate on both tasks. However, only 18.6% of students have problems on both tasks due to procrastination. Although Rothblum et al., (1986) report that substantial numbers of students procrastinate (40%), they define high procrastination as high scores on both procrastination frequency and procrastination problems in exams. However, they describe problems in terms of

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[1] Personal communication (Solomon, 1997)

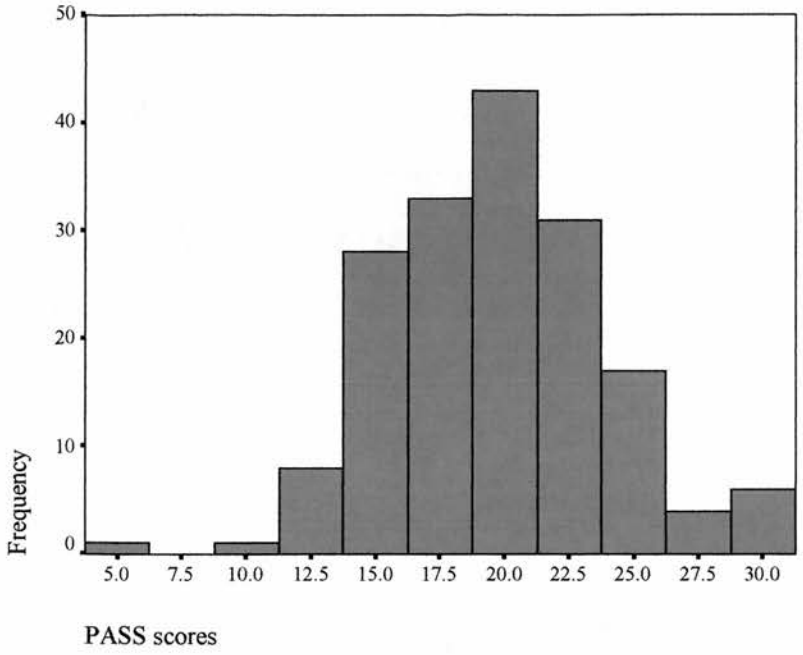
anxiety. Since 'anxiety' is a common experience prior to exams, and includes 'healthy' arousal, confounding this with procrastination will tend to inflate numbers. The present figure of 16.9% of students with high problem scores for both exams and essays is perhaps a more conservative estimate of generalised academic procrastination.

Table 8.1 Procrastination problems and frequency: Percentage of students scoring 'always' or 'nearly always' (Solomon & Rothblum (1984) norms in brackets)

| | | |
|---|---|---|
| **Exam:** | | |
| Frequency | 40.1 | (27.6) |
| Problem | 27.9 | (21.2) |
| Both | 18.6 | |
| | | |
| **Essay:** | | |
| Frequency | 56.4 | (46.0) |
| Problem | 27.4 | (23.7) |
| Both | 27.1 | |
| | | |
| **Reading assignment:** | | |
| Frequency | 61.6 | (30.1) |
| Problem | 36.6 | (23.7) |
| Both | 27.3 | |

The Total PASS score mean was 19.7 (SD 4.2). The sample consisted of 25.8% male and 74.2% female students, with no mean gender difference in total PASS scores ($t(130) = .62$, n.s.), consistent with previous research (Ferrari et al., 1995). The mean procrastination frequency was 10.54, (SD 2.36), which was significantly higher than the procrastination problems mean score of 9.20 (SD 2.44) ($t(171) = 7.41$, $p < .001$). There was one low scoring outlier ($Z = 3.25$) which was retained in the analysis. The distribution for the PASS total scores is shown in figure 8.1. The skewness and kurtosis statistics for the PASS total score, frequency and problem sub-scales were within acceptable limits.

Figure 8.1 Distribution of PASS scores




## 8.5 PROCRASTINATION REASONS SUB-SCALE

### 8.5.1 PRELIMINARY ANALYSIS

A frequency analysis revealed that nine items had less than 10% of responses in the two highest scale points: Q(22) others expectations, Q(20) resent deadlines, Q(18) deadline challenge, Q(14) peer resentment, Q(12) deadline excitement, Q(11) information difficulty, Q(7) resent assignments, Q(13) choice difficulty, and Q(3) advice. Poor frequency distributions for these items are also reported in the test norms. Apart from Q(11), internal consistency was also poor for these items, and their corrected inter-item correlations (< 0.30) would be considered too low (Nunnally, 1978).

## 8.5.2 FACTOR ANALYSIS

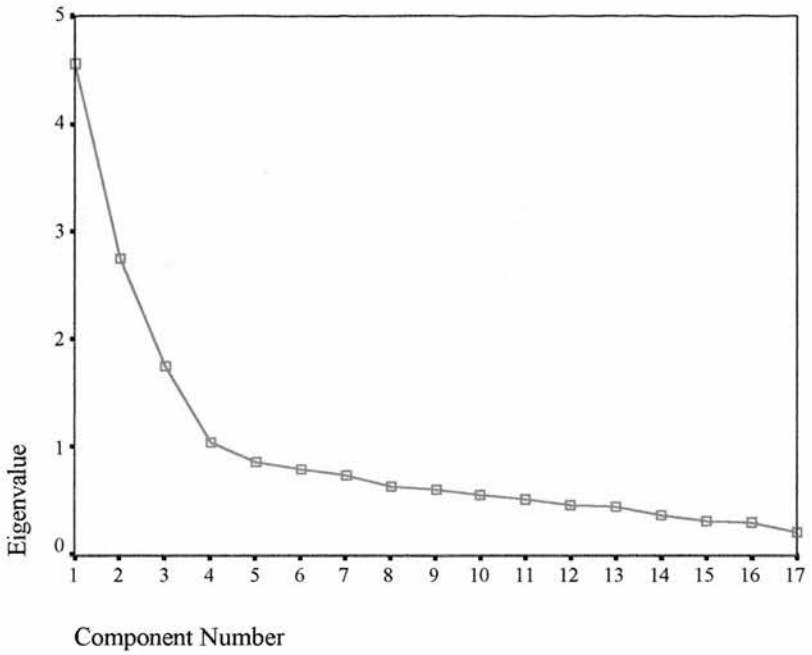
The nine items with inadequate frequency distributions were removed and the remaining items subjected to a principal component analysis using varimax rotation. The sample size (n = 172) was adequate in terms of sample size to number of variables ratio, which exceeds Gorsuch's (1983) recommended level of 10:1. It also exceeds the recommended subjects to factors ratio of 20:1 that some researchers argue is a more important criteria (Arrindel & Van de Ende, 1985). The Kaiser-Maeyer-Olkin measure of sampling adequacy (.830) and the Bartlett Sphericity test ($p < .001$) were both acceptable. The scree test was used as the primary criteria for retaining factors.

Table 8.2 Reasons for procrastination scale: Eigenvalues and percentage variance

| | Factor | | | |
|---|---|---|---|---|
| | I | II | III | IV |
| Percentage variance | 26.83 | 16.19 | 10.34 | 6.18 |
| Eigenvalue | 4.56 | 2.75 | 1.76 | 1.05 |

Four factors had eigenvalues above one, however there is a substantial drop after the second factor and the final factor is only just above the criterion (table 8.2). The scree plot indicates three factors lie above the scree line (figure 8.2). Given that the eigenvalue criteria generally overestimates the number of factors, this suggests that three is the maximum number (Zwick & Velicer, 1986).

Figure 8.2 Scree plot of eigenvalues




The three and two factor solutions were compared, and the factor loadings and communalities (the total amount of variance of an item shared with other variables in the analysis) for the three factor solution shown in table 8.3. Examination of the third factor items suggests these represent positive reasons for procrastinating. Thus, the highest loading item and that most clearly defining the factor refers to waiting for more information from the lecturer. However, this is the only pure item, and the remaining items load on the other factors, particularly factor I. This suggest that these items reflect a mixture of constructive concern regarding information and evaluative anxiety.

The first two factors consisted of five items with very good factor loadings (> .60). In addition, these factors were well defined with each item loading only on its own factor. The five items on factor I matched the items on Rothblum and Solomon (1984) 'fear of failure' factor, reflecting performance evaluation issues as the essential feature. The top three items on factor II also match the items on Rothblum and Solomon 'task aversiveness' factor. Since, item loadings below .5 are not reported by these authors, it is

unclear if the present items loaded at a lower level on this factor. Nevertheless, examination of item wording suggests that all involve issues of discomfort. Indeed, the highest loading item 'feeling too lazy' is almost synonymous with the frustration intolerance comfort sub-scale. The item 'feeling overwhelmed by the task' loads relatively equally on aversiveness and fear of failure. This is consistent with both factor concepts, since feeling 'overwhelmed' could relate to the task being percieved as 'too hard and uncomfortable' (frustration intolerance) or the person being inadequate for the task (self-worth).

The analysis points to two dysfunctional procrastination factors each defined by five items, with a weaker third factor reflecting functional procrastination. The first two factors were used in subsequent analyses as a modified version of the scale. There was no significant correlation between the two factors ($r\ (171) = .11$) suggesting they represent orthogonal dimensions. Coefficient alphas were good to acceptable (Oliver & Benet-Martinez, 2000), and the item-corrected correlations were high indicating good internal constancy between sub-scale items (table 8.4). The task aversiveness sub-scale mean was 13.70 (SD 4.46) and the fear of failure mean was 12.00 (SD 5.26). The fear of failure distribution was significantly positively skewed ($Z = 2.46$). However, this level of skewness in large samples is unlikely to substantially effect the analysis, therefore no transformations were made (Tabachnick & Fidell, 2000). Distributions for each sub-scale are shown in figures 8.3 and 8.4.

Table 8.3 Reasons for procrastination: Factor loadings (>.30) and communalities ($h^2$)

| Item | | Factor I | II | III | $h^2$ |
|---|---|---|---|---|---|
| 21 | Concerned wouldn't meet own expectations | .846 | | | .733 |
| 24 | Worried wouldn't meet own high standards | .792 | | | .628 |
| 15 | Didn't trust yourself to do a good job | .792 | | | .735 |
| 6 | Worried would get bad grade | .717 | | | .612 |
| 1 | Concerned lecturer would not like work | .712 | | | .521 |
| 4 | Had too many other things to do | -.375 | | | .226 |
| 24 | Felt too lazy | | .764 | | .667 |
| 9 | Really dislike writing essays | | .685 | | .524 |
| 16 | Didn't have the energy to begin | | .683 | | .496 |
| 25 | Pressured by friends to do other things | | .657 | | .542 |
| 16 | Felt would it just takes too long | | .643 | | .491 |
| 10 | Felt overwhelmed by the task | .369 | .530 | .330 | .526 |
| 23 | Waiting for more information from lecturer | | | .723 | .563 |
| 2 | Unsure what to include in essay | .381 | | .672 | .599 |
| 5 | Difficulty asking lecturer for information | .310 | | .597 | .453 |
| 8 | Didn't think had sufficient knowledge to begin | .302 | | .515 | .407 |
| 17 | Classmates had not stated essay either | | .357 | .450 | .347 |

Table 8.4 Procrastination reasons sub-scales: Corrected item-total correlations and coefficient alpha

| Factor I: Fear of failure | | | Factor II: Task aversiveness | | |
|---|---|---|---|---|---|
| 21 | Own expectations | .793 | 25 | Lazy | .568 |
| 24 | Personal standards | .658 | 9 | Dislike | .520 |
| 15 | Good job | .722 | 17 | Energy | .515 |
| 6 | Grade | .662 | 26 | Friends | .459 |
| 1 | Criticism | .635 | 16 | Long | .470 |
| Alpha = .867 | | | Alpha = .743 | | |

Figure 8.3 Task aversiveness distribution

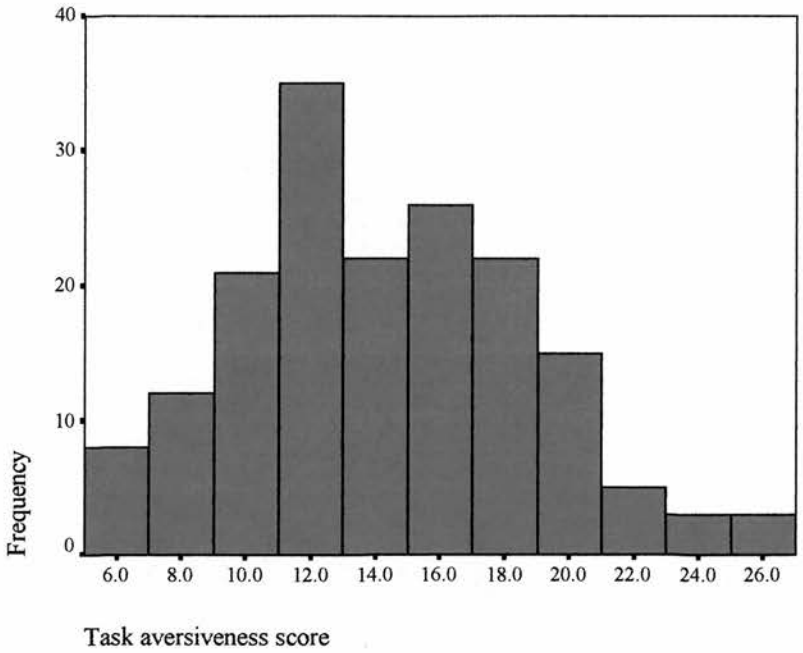
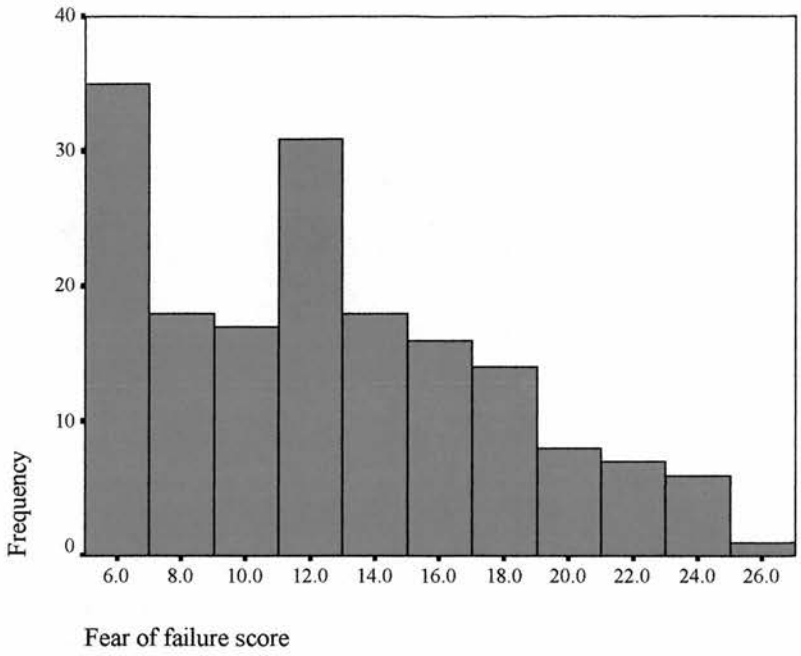


Figure 8.4 Fear of failure distribution




## 8.5.3 RELATIONSHIP BETWEEN PASS PROCRASTINATION SCALES

Using the combined groups from both studies, fear of failure and task aversiveness were both significantly correlated with procrastination problem rating, although fear of failure was more weakly related to procrastination frequency (table 8.5). However, when the two groups of students were analysed separately marked differences were found, and this will be examined later.

Table 8.5 Correlations between procrastination reasons and the frequency and problems sub-scales

| | Fear of failure | Task aversiveness |
|---|---|---|
| PASS total | .29*** | .52*** |
| Frequency | .15* | .53*** |
| Problem | .34*** | .38*** |

N = 171 *p < .05; ***p < .001

Examining the three academic tasks, task aversiveness was significantly correlated with procrastination on all three tasks, for both frequency (table 8.6) and problems (table 8.7). However, fear of failure is only weakly associated with procrastination frequency, and only on some academic tasks and not others. Thus, fear of failure is related to delaying writing essays but not revising exams. This is contrary to expectations since, if procrastination is related to avoidance of anxiety, exams would be expected to generate greater evaluative fear. On the other hand, fear of failure is significantly correlated with procrastination problems across all tasks. One explanation for these differences is that fear of failure may be acting to motivate work, particularly in situations were there is higher evaluative threat.

Table 8.6 Correlations between procrastination reasons and frequency sub-scale

| | Essay | Exam | Reading |
|---|---|---|---|
| Fear of failure | .20* | .08 | .10 |
| Task aversiveness | .42*** | .41*** | .50*** |

N = 171 *p < 0.05; **p < .01; ***p < .001

Table 8.7 Correlations between procrastination reasons and problem sub-scale

| | Essay | Exam | Reading |
|---|---|---|---|
| Fear of failure | .41*** | .20** | .23** |
| Task aversiveness | .32*** | .31*** | .30*** |

N = 171 **p < .01; ***p < .001

## 8.6 RELATIONSHIP OF PROCRASTINATION TO FRUSTRATION INTOLERANCE

### 8.6.1 PRELIMINARY FRUSTRATION-DISCOMFORT SCALE

Only the comfort scale was significantly correlated with the two PASS scales (table 8.8). It is notable that achievement frustration had no significant association with procrastination frequency or problems. Likewise, the lack of relationship between emotional discomfort and the procrastination scores suggests that task delay is not associated with anxiety avoidance. The same pattern was found when the three academic tasks were separately analysed.

Table 8.8 Correlations between Frustration-Discomfort and PASS scores

| | PASS Total score | PASS Frequency | PASS Problems |
|---|---|---|---|
| Emotional discomfort | .14 | .11 | .14 |
| Entitlement | .17 | .19 | .12 |
| Comfort | .36*** | .31** | .32** |
| Achievement | -.09 | .08 | -.08 |
| Total score | .20 | .18 | .17 |

N = 86 **p < .01; ***p < .001

The relationship between fear of failure, task aversiveness, and frustration intolerance supports the conceptual separation of these scales (table 8.9). The Frustration-Discomfort sub-scales, and particularly comfort, were more strongly associated with task aversiveness than with fear of failure, although emotional discomfort was equally associated with both types of procrastination. Achievement had a negligible relationship with task aversiveness, and a stronger although non-significant relationship with fear of failure. Onwuegbuzie (2000) found similar result using the Perfectionism Scale (Hewitt & Flett, 1989), in which fear of failure but not task aversiveness with associated with both the self-orientated and socially-prescribed sub-scales.

Table 8.9 Correlations between Frustration-Discomfort scores and reasons for procrastination

| | Fear of failure | Task aversiveness |
|---|---|---|
| Emotional discomfort | .34** | .38*** |
| Entitlement | .19 | .42*** |
| Comfort | .24* | .54*** |
| Achievement | .18 | .05 |
| Total score | .27* | .45*** |

N = 86 *p < .05; **p < .01; ***p < .001

The relationship of individual Frustration-Discomfort items and types of procrastination is shown in table 8.10. For clarity, only correlations with task aversiveness p < .001 are shown. Two gratification items were significant, although items referring to excitement were not correlated with procrastination. Personal flaws, which was dropped from the scale because of its strong correlation with both self-esteem and frustration disturbance, was related to both types of procrastination.

Table 8.10 Correlations between Frustration-Discomfort items and procrastination reasons sub-scale

| | | Sub-scale | Task aversiveness | Fear of failure |
|---|---|---|---|---|
| 46 | Easy solutions | comfort | .47*** | .25* |
| 18 | Task hassle | comfort | .44*** | .14 |
| 27 | Extra problems | emotional | .40*** | .28* |
| 66 | Difficult tasks | comfort | .38*** | .15 |
| 54 | Effort | comfort | .38*** | .08 |
| 58 | Persistence | comfort | .38*** | -.01 |
| 72 | Indulge | entitlement | .38*** | .10 |
| 61 | Gratification delay | entitlement | .35*** | .09 |
| 56 | Personal flaws | | .43*** | .34*** |
| 48 | Excitement | | .07 | .01 |
| 3 | Boring tasks | | -.16 | .16 |
| 21 | Buzz | | .18 | -.02 |

N = 86 *p < .05; **p < .01; ***p < .001

Differentiation of high procrastination by individual items was examined by dividing the sample into two groups based on procrastination problem scores (table 8.11). The items predicting high procrastination problems largely came from the comfort sub-scale. It can be seen that one achievement item, Q(12) unfinished work, was significantly predicted lower procrastination problems. Neither Q(61) gratification delay or Q(72) indulgence predicted procrastination problems (t (84) = 1.65 and 1.87, ns). However, indulgence but not gratification delay was associated with higher frequency of procrastination (t (84) = 2.25, $p < .05$, and 1.32, ns). Similarly, neither item was significantly correlated with problems, whereas both indulgence and gratification delay were correlated with frequency (r (86) = .25, $p < .05$, and .22, $p < .05$).

Table 8.11 Frustration-Discomfort items distinguishing high and low procrastination problem scores (n = 35/51)

| Scale item | | Sub-scale | t |
|---|---|---|---|
| 46 | Easy solutions | comfort | 3.56*** |
| 49 | Time pressure | comfort | 2.89** |
| 54 | Effort | comfort | 2.76** |
| 66 | Difficult tasks | comfort | 2.31* |
| 22 | Freedom from hassle | comfort | 2.18* |
| 14 | continuing situation | emotional | 2.08* |
| 56 | Personal flaws | | 3.07** |
| 12 | Unfinished work | achievement | -2.45* |

N = 86 *p < .05; **p < .01; ***p < .001

## 8.6.2 FEAR OF FAILURE AND FRUSTRATION INTOLERANCE INTERACTION

The specificity of the relationship between frustration intolerance beliefs and procrastination was investigated. Controlling for fear of failure, partial correlations indicated that comfort beliefs were still significantly related to procrastination problems (pr (82) = .23, $p < .05$) and to frequency (pr (82) = .32, $p < .01$). When comfort beliefs were controlled for, fear of failure continued to be significantly correlated with procrastination problems (pr (82) = .24, $p < .05$) but not frequency (pr (82) = -.04, ns).

To further examine the unique variance of the separate beliefs a simultaneous multiple regression analysis was conducted. When Frustration-Discomfort beliefs were entered as a block only comfort proved to be a significant predictor of procrastination problems (table 8.12 and procrastination frequency (table 8.13). Although achievement approached significance as a predictor of reduced frequency.

Table 8.12 Multiple regression analysis: Procrastination problems

| Variables Entered | t | p | ß |
|---|---|---|---|
| Emotional discomfort | 0.69 | .491 | -.11 |
| Entitlement | 0.44 | .660 | -.06 |
| Comfort | 3.23 | .002 | .52 |
| Achievement | 1.66 | .101 | -.20 |

Multiple R = .40
$R^2$ = .16
F (4,81) = 3.92, p < .01

Table 8.13 Multiple regression analysis: Procrastination frequency

| Variables Entered | t | p | ß |
|---|---|---|---|
| Emotional discomfort | 1.09 | .277 | -.17 |
| Entitlement | 0.71 | .477 | -.10 |
| Comfort | 2.80 | .006 | .45 |
| Achievement | 1.84 | .070 | -.22 |

Multiple R = .40
$R^2$ = .16
F (4,81) = 3.81, p < .01

To determine the independence of frustration intolerance from self-evaluation a hierarchical analysis was conducted in which fear of failure was entered on step 1 and the Frustration-Discomfort sub-scales entered on step 2. Comfort remained a significant predictor for both procrastination problems (table 8.14) and frequency (table 8.15),. For

problems, the frustration block added 13% additional variance compared from 8% from fear of failure. For frequency, the frustration block added 16% additional variance, whilst the contribution from fear of failure was negligible. Achievement frustration was a significant predictor of reduced procrastination controlling for fear of failure.

Table 8.14 Multiple regression analysis: Predicting procrastination problems

| Variables Entered | t | p | ß |
|---|---|---|---|
| Step 1 | | | |
| Fear of failure | 2.74 | .008 | .29 |
| Step 2 | | | |
| Emotional discomfort | 1.30 | .197 | -.20 |
| Entitlement | 0.01 | .991 | .02 |
| Comfort | 2.79 | .007 | .44 |
| Achievement | 1.99 | .049 | -.24 |

Step 1: Multiple R = .29, $R^2$ = .08, $F_{cha}$ (1,83) = 7.50, p < .01
Step 2: Multiple R = .461, $R^2_{cha}$ = .13, $F_{cha}$ (4,79) = 3.24, p < .05

Table 8.15 Multiple regression analysis: Predicting procrastination frequency

| Variables Entered | t | p | ß |
|---|---|---|---|
| Step 1 | | | |
| Fear of failure | 0.21 | .836 | .02 |
| Step 2 | | | |
| Emotional discomfort | 1.14 | .260 | -.18 |
| Entitlement | 0.67 | .508 | -.10 |
| Comfort | 2.85 | .006 | .46 |
| Achievement | 1.78 | .079 | -.22 |

Step 1: Multiple R = .05, $R^2$ = .01, $F_{cha}$ (1,83) = 0.17, ns
Step 2: Multiple R = .16, $R^2_{cha}$ = .16, $F_{cha}$ (4,79) = 3.83, p < .01

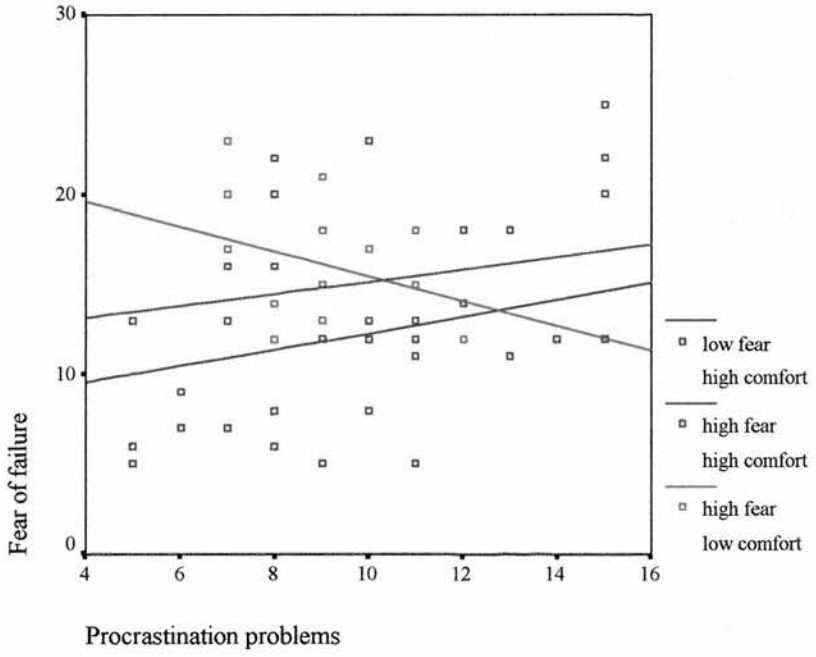
The interaction between high scores on fear of failure and comfort was examined by dividing the groups by median splits on exam procrastination problems (table 8.16). Significantly fewer students with high scores on failure/low on comfort had exam procrastination problems, compared to those high on both dimensions ($\chi^2$ (1) = 4.77, p <

.05; Cramer's V = -.33). A similar analysis for exam procrastination frequency was not significant.

Table 8.16 Comparing students classified as high/low on fear of failure/comfort and high/low on exam procrastination problems

| | Exam problems | |
|---|---|---|
| | Low % | High % |
| High on both fear/comfort | 52 | 48 |
| High on fear/low comfort | 86 | 14 |
| | N = 28 | N = 17 |

Figure 8.5 Regression lines predicting total procrastination problem score




The interaction between total problem scores and students classified as high/low on fear of failure and comfort is presented in figure 8.5. As can be seen, students with high scores on both dimensions (r (31) = .23), or with high comfort/low fear of failure (r (14)

= .44), had a positive association with procrastination. In contrast, the slope for high fear/low comfort is negative (r (14) = -.31) indicating a tendency for individuals with high fear of failure, when comfort scores are low, to procrastinate less. Clearly, the numbers are small for statistical analysis and in the revised scale population this relationship was not replicated. However, it does suggest for some individuals that fear of failure, when not accompanied by discomfort intolerance, may reduce problematic procrastination.

### 8.6.3 REVISED FRUSTRATION-DISCOMFORT SCALE

Comparing the study on the preliminary scale to the revised scale study, it was found that the correlations between reasons for procrastination and PASS scales were noticeably different (table 8.17). In particular, the relative importance of task aversiveness compared to fear of failure was reversed with task aversiveness having a weaker relationship with procrastination. However, mean scores did not significantly differ between the two groups on total PASS scores or reasons for procrastinating.

Table 8.17 Correlations between reasons for procrastination and PASS scales for student samples I and II

| | Fear of failure | | Task aversiveness | |
|---|---|---|---|---|
| Groups | I | II | I | II |
| PASS total | .19 | .43*** | .64*** | .36*** |
| Frequency | .05 | .30** | .63*** | .40*** |
| Problem | .29** | .42*** | .52*** | .21 |

Both groups N = 86 *p < .05; **p < .01; ***p < .001

In comparison with the preliminary study, the relationship between the revised Frustration-Discomfort scales and the reasons for procrastination was also muted. On the four-factor scale, only the comfort sub-scale was significantly correlated with task

aversiveness, and fear of failure was not significantly correlated with any of the Frustration-Discomfort scales (table 8.18).

Table 8.18 Correlations between revised Frustration-Discomfort scores and reasons for procrastination

| | Fear of failure | Task aversiveness |
|---|---|---|
| Emotional discomfort | .19 | .18 |
| Entitlement | .10 | .09 |
| Comfort | .12 | .31** |
| Achievement | .18 | .06 |
| Total four factor score | .19 | .20 |
| Gratification | .10 | .21* |
| Fairness | .08 | .11 |
| Total five factor score | | |

N = 86 **p < .01

The relationship between PASS and Frustration-Discomfort scores is shown in table 8.19. Consistent with the preliminary scale, comfort was significantly correlated with procrastination problems and overall PASS scores, although it failed to reach significance with procrastination frequency. Surprisingly, a notable difference from the preliminary scale was that emotional discomfort, achievement, and entitlement were negatively correlated with procrastination frequency, although only for achievement was this relationship significant. This is reflected in the total Frustration-Discomfort score which had a negative correlation with frequency but a significantly positive correlation with problems.

Table 8.19 Correlations between revised Frustration-Discomfort Scale, self-esteem, and PASS scores

| | PASS Total score | PASS Frequency | PASS Problems |
|---|---|---|---|
| Emotional discomfort | .08 | -.18 | .25* |
| Entitlement | -.10 | -.21 | .04 |
| Comfort | .31** | .18 | .34** |
| Achievement | -.13 | -.26* | .03 |
| Total four-factor score | .05 | -.14 | .21* |
| Gratification | .04 | -.01 | .06 |
| Fairness | -.12 | -.26* | .05 |
| Total five-factor score. | .04 | -.13 | .19 |
| Rosenberg self-esteem | -.42*** | -.25* | -.45*** |

N = 86 (Rosenberg N = 83) *p < .05; **p < .01; ***p < .001

The difference between procrastination frequency and problems is illustrated by the analysis of individual items distinguishing between high/low procrastination. The items distinguishing high problem scores are shown in table 8.20. As in the preliminary scale, comfort and emotional discomfort items were predictive of high problem scores. This suggests that problem procrastination is related to avoidance of emotional distress or the avoidance of difficulty and hassles. Examination of procrastination frequency also shows that the comfort items are associated with increased procrastination frequency (table 8.21). However, it can be observed that the achievement and emotional discomfort items have a negative relationship and are therefore predictive of *lower* rates of procrastination. Interestingly, one item Q(1) painful memories, has a positive relationship with problems and a negative relationship with frequency.

Analysing the two entitlement facets separately showed that fairness is significantly related to reduced frequency, but no significant relation to problems. Gratification also had little relationship with any of the PASS scales, although individual items did show some association. Thus, Q(3) gratification delay was weakly correlated with procrastination frequency ($r(86) = .22$, $p < .05$) and problems ($r(86) = .21$, ns). However, it was not predictive of either high problem or frustration scores ($t(84) = .68$

and .26, ns) Likewise, Q(37) indulgence was significantly correlated with frequency (r (86) = .25, p < .05) but not problems (r (86) = .14, ns), and was predictive of high procrastination frequency but not problems (t (84) = 2.28, p < .05 and .63, ns).

Table 8.20 Revised Frustration-Discomfort items distinguishing low and high procrastination problem scores (n = 37/49).

| Scale item | | Sub-scale | t |
|---|---|---|---|
| 19 | Difficult tasks | comfort | 2.45* |
| 40 | Task hassle | comfort | 2.57* |
| 14 | Easy solutions | comfort | 3.70*** |
| 1 | Painful memories | emotional | 2.11* |
| 25 | Disturbing feelings | emotional | 3.43*** |
| 13 | Thoughts | emotional | 4.20*** |
| 18 | Upsetting situations | emotional | 2.08* |

N = 86 *p < .05; **p < .01; ***p < .001

Table 8.21 Revised Frustration-Discomfort items distinguishing low and high procrastination frequency scores (n = 36/50).

| | | | |
|---|---|---|---|
| 19 | Difficult tasks | comfort | 2.19* |
| 14 | Easy solutions | comfort | 2.06* |
| 1 | Painful memories | emotional | -2.24* |
| 43 | Emotional control | emotional | -2.73** |
| 12 | Potential | achievement | -2.33* |
| 24 | Unfinished work | achievement | -2.32* |
| 36 | Indulgence | gratification | 2.28* |
| 37 | Disrespect | entitlement | -2.07* |

### 8.6.4 ANALYSIS OF INDIVIDUAL ACADEMIC TASKS

Correlation analysis of the revised Frustration-Discomfort sub-scales with individual academic tasks, showed that achievement frustration was significantly related to lower procrastination frequency on both essays and exams (table 8.22). As regards exams and essays, it can be observed that comfort was related to procrastination problems and self-esteem to both increased problems and frequency. However, high achievement

frustration appeared to reduce the frequency of procrastination on exams and essay preparation.

Table 8.22 Correlations between self-esteem, revised Frustration-Discomfort scores, and academic tasks

| | Problems | | | Frequency | | |
|---|---|---|---|---|---|---|
| | Essay | Exam | Reading | Essay | Exam | Reading |
| Emotional discomfort | .18 | .20 | .21* | -.17 | -.12 | .01 |
| Entitlement | -.05 | .05 | .10 | -.34** | -.13 | -.01 |
| Comfort | .28** | .30** | .20 | .08 | .13 | .23* |
| Achievement | -.03 | -.03 | .14 | -.25* | -.24* | -.11 |
| Self-esteem | -.33** | -.39*** | -.33** | -.19 | -.27* | -.14 |

N = 86 *p < .05; **p < .01; ***p < .001

### 8.6.5 INTERACTION BETWEEN FRUSTRATION INTOLERANCE AND SELF-ESTEEM

The failure to include a self-esteem scale in the first study limited the analysis of ego disturbance and frustration intolerance interaction. This was remedied in the second study. As before, attention was paid to the Rosenberg scoring patterns, given their vulnerability to response errors (Marsh, 1996), although student response errors were low compared to patients. There was one total score outlier and one discrepancy score outlier, which were removed from the analysis. The mean was 30.27 (SD = 4.99), consistent with norms from other student samples (e.g. Bagley, Bolitho, & Bertrand, 1997). Low self-esteem was significantly related to fear of failure ($r(83) = .46$, $p < .01$) and to a lesser extent with comfort ($r(83) = -.25$, $p < .05$), but not task aversiveness ($r(83) = -.12$). Self-esteem was significantly related to procrastination problems, and procrastination frequency (table 8.18). Partial correlation analysis indicated that self-esteem continued to be significantly correlated to total PASS scores when controlling for fear of failure ($pr(80) = .29$, $p < .01$). This suggests that self-esteem is not fully mediated by fear of failure and that other beliefs related to self-worth are involved in

procrastination. Likewise, comfort remained significantly correlated to total PASS scores when controlling for aversiveness (pr (80) = .22, $p < .05$).

Multiple regression was conducted to determine whether Frustration-Discomfort beliefs predicted procrastination independent from self-worth. The Frustration-Discomfort sub-scales were entered along with self-esteem, using procrastination problems as the criterion measure. Only comfort and self-esteem remained significant predictors. (table 8.23). Comfort and self-esteem again remained significant predictors when procrastination frequency was employed as the criterion. Emotional discomfort was a significant predictor of lower procrastination frequency, with achievement approaching significance (table 8.24). Altogether, self-esteem and comfort accounted for 25% of the variance in procrastination problems (Multiple R = .50, $R^2_{cha}$ = .25, $F_{cha}$ (2,80) = 13.49, $p < .001$) and 7.5% in frequency (Multiple R = .27, $R^2_{cha}$ = .08, $F_{cha}$ (2,80) = 3.24, $p < .05$).

Table 8.23 Multiple regression analysis: Procrastination problems

| Variables Entered | t | p | ß |
|---|---|---|---|
| Self-esteem | 3.67 | .001 | -.44 |
| Emotional discomfort | 0.37 | .712 | -.06 |
| Entitlement | 0.73 | .466 | -.09 |
| Comfort | 2.72 | .008 | .33 |
| Achievement | 0.96 | .340 | -.12 |

Multiple R = .54
$R^2$ = .29
F (5,77) = 6.18, $p < .001$

Table 8.24 Multiple regression analysis: Procrastination frequency

| Variables Entered | t | p | ß |
|---|---|---|---|
| Self-esteem | 3.49 | .001 | -.45 |
| Emotional discomfort | 2.41 | .018 | -.38 |
| Entitlement | 1.33 | .189 | -.16 |
| Comfort | 3.58 | .001 | .39 |
| Achievement | 2.03 | .095 | -.20 |

Multiple R = .56
$R^2$ = .31
F (5,77) = 6.91, p < .001

A simultaneous multiple regression analysis was conducted to examine the relationship of the five factor model to procrastination problems. However, it explained little additional variance compared to the four-factor model ($R^2$dif = .02; frequency $R^2$dif = .03) and relationships between variables remained essentially the same. Gratification was not associated with either procrastination frequency (t (84) = 1.23, p = .222, ß = .17) or problems (t (84) = 1.31, = .193, ß = -.19).

## 8.7 DISCUSSION

An objective of this study was to validate the preliminary and revised Frustration-Discomfort Scales against an established procrastination measure. Analysis of the PASS scale obtained two well-defined sub-scales that conceptually corresponded with the REBT categories of self-worth/frustration intolerance. Both versions of the Frustration-Discomfort Scale were differentially correlated with the task aversiveness scale as compared to fear of failure, supporting convergent and discriminative validity. As predicted by REBT theory both self-worth and frustration intolerance were involved in procrastination. Both categories of belief, when each was respectively controlled, significantly predicted procrastination problems. Furthermore, the Frustration-Discomfort sub-scales were differentially related with procrastination, with comfort

remaining a significant predictor of both procrastination problems and frequency after controlling for self-esteem. This supports the usefulness of employing a multidimensional measure of frustration intolerance.

The relationship of achievement frustration with procrastination was of particular interest. In the preliminary study, achievement had a negligible correlation with both frequency and procrastination frequency. When controlling for fear of failure in a multiple regression analysis, achievement was a significant predictor of reduced procrastination problems. In the revised scale study, in which the achievement scale was lengthened by the addition of further items, the relationship with reduced procrastination was more pronounced. Thus, achievement was significantly correlated with reduced frequency of procrastination, and approached significance in the multiple regression analysis when controlling for self-esteem. There was no significant relationship to procrastination problems. These findings are consistent with perfectionism research which has often shown no relationship between the 'personal standards' sub-scale and procrastination problems and a significant negative correlation with frequency (Frost et al., 1990). In general, perfectionistic beliefs referring specifically to high standards do not to correlate with measures of procrastination (e.g. Stober, 1998) and are frequently unrelated or to have a negative correlation with emotional disturbance (Minarik & Ahrens, 1996; Enns & Cox, 1999). Indeed, self-orientated perfectionism is associated with improved problem solving and resourcefulness (Flett, Hewitt, Blankstein, Solnik, & Brunschot, 1996). On the other hand, perfectionism sub-scales linked with self-evaluation are consistently related to maladjustment, avoidance of problem solving (e.g. Hewitt & Flett, 1991), as well as procrastination (Flett et al., 1992). The present achievement scale was aimed to assess dysfunctional perfectionistic beliefs separate from self-evaluation. The results indicate that demands for high standards, and intolerance of these being frustrated, reduce the frequency of procrastination but have no effect on reported problems due to procrastination.

This lack of association between the achievement sub-scale and procrastination raises some theoretical questions, since REBT theory has emphasised the close relationship between perfectionism and demandingness, as well as with procrastination (Ellis & Knaus, 1977). Thus, Ellis (2002) describes perfectionists as holding irrational beliefs more rigidly and persistently, and in this sense perfectionism may be said to be almost synonymous with demandingness. However, these results suggest that to consider demandingness as invariably counterproductive may be overly simplistic. Indeed, the significant relationship between achievement and reduced procrastination frequency suggests that holding demanding beliefs may productive. It might be argued that the revised scale items do not directly refer to demands, however the preliminary achievement sub-scale, whose items did refer to demands, also showed no evidence of a positive relationship with procrastination. It might also be argued that achievement demands, whilst motivating goal performance, may be associated with other costs. Thus, individuals high on achievement frustration may procrastinate less but this may be associated with other problems such as overworking or experiencing increased anxiety in relation to their work.

The relationship of emotional discomfort with procrastination is also relevant to this issue. Thus, emotional discomfort in the revised scale study was related to *both* increased problems and to decreased procrastination frequency, although the latter failed to reach significance. The reduction of procrastination frequency was particularly found with essays and exams. A possible explanation is that increased anxiety, and intolerance of this, may motivate the individual to work. This would be consistent with other studies that have shown a negative association between avoidant coping and intolerance of arousal, and procrastination (Burns et al., 2000). However, the relationship between emotional discomfort and procrastination was not robust, and there was no significant relationship between this and either procrastination frequency or problems in the preliminary study. Other research has also failed to find an association between depression (Owens & Newbiggin, 2000) or negative affect and procrastination (Pschyl et

al., 2000). Indeed, Lay (1995) concludes that, in general, affect plays only a minor role in procrastination.

The interaction of fear of failure and comfort beliefs also suggested a complex interrelationship, both between the belief categories and with situational factors. Overall, compared to fear of failure task aversiveness was more strongly related to procrastination frequency, whilst both were equally related to problems. However, in the preliminary study a combination of low comfort scores and high fear of failure led to a negative relationship between fear of failure and procrastination problems. This suggests that, given good frustration tolerance, fear of failure may also serve to reduce procrastination. As with emotional discomfort, the relationship between fear of failure and procrastination was also influenced by the situation, with fear of failure having a weaker correlation with exam procrastination compared to essays. Milgram and Toubiana (1999) found a similar result for homework, in that the more students were anxious the less they procrastinated, but the reverse regarding exams.

Schouwenburg and Groenewoud (2001) suggest procrastination is related to the tendency to discount future rewards combined with low Conscientiousness personality trait (Schouwenburg & Lay, 1995). Indeed, all of the five-factor Conscientiousness scale facets have an inverse relationship with procrastination (Johnson & Bloom, 1995). The present research suggests that whilst high achievement may reduce procrastination frequency this relationship is relatively weak. Thus when variance due to achievement is accounted for, self-esteem and comfort beliefs continue to remain strong predictors of procrastination frequency. In contrast, when these two variables are controlled, achievement is only a weak predictor of reduced frequency and unrelated to problems. The most important influence on whether procrastination is dysfunctional is the presence of 'irrational' beliefs involving comfort and self-worth. However, one limitation of the study concerns the most appropriately measure of procrastination. The PASS is a self-report measure and fails to distinguish between the frequency of functional and dysfunctional procrastination. A more adequate test of the hypothesis that irrational

beliefs are associated with dysfunction would be to use an objective measure of procrastination problems as well as reported frequency.

As regards the other Frustration-Discomfort sub-scales, the entitlement scale, which is significantly correlated with anger, failed to correlate with any measure of procrastination. Indeed, of the entitlement facets in the revised scale, fairness had a significant negative correlation with procrastination frequency. This does not support the hypothesis of a link between anger and procrastination. There was also mixed support for procrastination being related to the inability to resist 'immediate gratification'. Overall, the other entitlement facet, gratification, had virtually no relationship with either procrastination frequency or problems. However, the 'indulgence' item on both Frustration-Discomfort scales was significantly related with increased frequency but not with increased problems with procrastination. Similarly, the 'gratification delay' item on both scales was not predictive of neither high levels of procrastination problems or frequency, although it was significantly correlated with increased frequency. Also of interest is that there was no relationship between the preliminary scale 'excitement', 'boredom', or 'buzz' items and procrastination measures. They also suggest that excitement/boredom are not related to procrastination, and that 'sensation seeking' is a separate concept to that of frustration intolerance and the demand for instant gratification.

These findings suggest that self-indulgence increases the degree with which procrastination occurs but that this increased frequency is not translated into subsequent problems. It is also consistent with the argument that procrastination is commonplace but only a small proportion of this is dysfunctional or results in problems. Thus, whilst nearly 60% of students reported frequent procrastination only 25% had significant procrastination problems. Such non-problematic procrastination possibly reflects both functional procrastination and preference for immediate rewards. However, such short-term hedonism is only 'irrational' if indulged in spite of significant costs that the individual would prefer not to incur. Without these additional qualifications, short-term

hedonism merely remains an indulgence, with the longer-term costs accepted as part of this choice. Thus, using the revised scale, self-esteem and comfort accounted for 25% of the variance of procrastination problems but only 7% of procrastination frequency. This supports the argument that irrational beliefs, whether related to self-worth or frustration intolerance, are associated most closely with dysfunctional consequences. It might be alternatively suggested that indulgent individuals may not perceive procrastination as problematic because they are less concerned regarding the consequences. However, as noted above, this would requires a more detailed analysis of the objective consequences of procrastination.

# CHAPTER NINE

# THERAPY ENGAGEMENT AND OUTCOME

## 9.1 INTRODUCTION

The immediate emotional consequences of frustration intolerance are often not dramatic. Rather, these beliefs play a subtle role in emotional disturbance, maintaining problems by encouraging avoidance and undermining change. They have been highlighted as a frequent cause of failure and as the most common and strongest form of resistance in therapy (Ellis, 1983; 1985a). Specific beliefs described in the literature as associated with resistance are included in several of the frustration-discomfort sub-scales. Thus, Ellis (1980a) notes the importance of secondary avoidance in anxiety complaints, in which emotional discomfort is thought of as unbearable and awful. Likewise, beliefs related to general comfort are also implicated, since change even at the basic level of attending sessions involves hassles and discomfort. Lastly, Ellis points out that 'ego-grandiosity' is an aspect of frustration intolerance. Therefore entitlement beliefs, such as: 'I shouldn't have to change, I should get what I want now', may also play an important role in resistance.

For the client the process of change requires initial and continued attendance, and engagement in therapeutic tasks. For example, completion of homework assignments has been found a good outcome indicator in cognitive behavioural therapy (Burns & Nolen-Hoeksema, 1991). Following therapy, persistence in working at problems has also been suggested to be important predictor of relapse (DiGuiseppe, 1999). That is, symptomatic improvement may be insufficient to maintain progress without longer-term behavioural and environmental change. For clients, the difficulty is that such changes often involve further emotional discomfort and effort, which is less appealing when symptoms have improved. Some psychological problems have been particularly associated with difficulties in therapy engagement. For example, entitlement beliefs and

justified self-righteousness are central to anger and play an important role in creating resistance in this group (DiGiuseppe et al., 1994). Similarly, it has been suggested that a central feature of borderline personality problems is poor frustration tolerance (Ellis, 1994b), particularly the toleration of emotional discomfort (Linehan, 1993).

The problems of therapy engagement are highlighted by research on attendance rates. Regarding referrals to a British adult psychology department, Conaghan, Traynor, Davidson, and Ralston (2000) report that 26% of clients failed to attend the first appointment and 21% of return appointments were either not attended or cancelled. Other research indicates that 40% fail to attend the initial appointment (Trepka, 1986), 24% of clients discontinue before the third appointment (Balfour, 1986), and 60% fail to complete therapy (Goode, 1997). Investigations of the reasons for non-attendance and premature termination suggest that psychological aspects are more important than demographic variables. For instance, Gerhand and Blakey (1994) found no differences between terminators and completers as regards gender, age, occupation, length of problem, or interference with life. Rather, the most common reason given by clients for discontinuation was 'dislike of treatment'.

REBT theory suggests that a major aspect of premature termination and non-attendance will be related to frustration intolerance due to intolerance of change and discomfort. It also suggests that outcomes may be poorer due to failure to work at therapeutic tasks. (Ellis, 1985a). On the other hand, therapy may also be lengthened due to dependence on therapists approval associated with low self-acceptance (Ellis, 1985b). Clearly, both ego disturbance and frustration intolerance beliefs may have a number of possible effects on therapy. However, although many of the beliefs relating to therapeutic resistance have been described there is little empirical evidence regarding these. The analysis of frustration intolerance as a multidimensional construct enables investigation of their specific relationships with different aspects of therapy resistance, engagement, and outcome.

## 9.2 METHOD

### 9.2.1 PROCEDURE

Outcome and treatment data for the preliminary Frustration-Discomfort scale clinical population was analysed along with the packet of questionnaires that each patient completed prior to the first appointment.

### 9.2.2 PARTICIPANTS

The clinical sample for the preliminary scale comprised 242 individuals. Referrals came from two geographical sectors one industrial and the other predominately rural. Treatment involved 17 clinical psychologists, with the author seeing 47% of the total. An analysis of questionnaire non-respondents was also carried out using a sample of 166 (50%) consecutive referrals. Drop out was defined as failure to attend the final session, with DNA rates including cancellations.

### 9.2.3 MEASURES

Appointment data were routinely recorded in case notes by each therapist. This included a global outcome rating on a scale of 1 (complete improvement) to 6 (worse). Rating validity has been investigated in three previous studies (Turvey, 1997). These found significant correlations between client and psychologist ratings ($r\ (123) = .60, < 0.01$) and with standardised tests, and showed an 81% client/psychologist agreement of 'improved' (1-3) versus 'non-improved' (4-6) categories. Clients were also given a 'main problem' classification, which in the present study was limited to nine categories. Information regarding treatment and problem history were taken from the background questionnaire. This included a patient rating of emotional problem intensity over the past month and the emotion 'most clearly describing the current problem'. Whilst unsophisticated, these ratings were found to correlate well with assessment measures in

the packet and described previously: (anger/TAS (r (239) = .47), anxiety/HAD (r (237) = .53), depression/HAD (r (236) = .47), worthlessness/Rosenberg (r (229) = -.63).

## 9.3 RESULTS

### 9.3.1 DESCRIPTIVE DATA: BACKGROUND QUESTIONNAIRE

The background questionnaire indicated that most problems were relatively longstanding (table 9.1) and in the moderate to severe range (tables 9.2). Medication for the main problem was being taken by 61% of clients (table 9.3), and 41% had previously received psychological therapy or counselling. In rating feelings over the past month, 62% complained of 'strong' anxiety, 51% depressed mood, 37% guilt, 32% anger, and 16% embarrassment. Ratings of self-worth indicated that 43% of clients had strong feelings of worthlessness compared to 33% who experienced little or no problem with worthlessness. The current problem was specified as anxiety by 32% of clients, worthlessness 18%, depressed mood 15%, anger and tension 10% each, guilt and hurt 5% each, and embarrassment 2%.

Table 9.1 Problem length

| | Frequency | Percent |
|---|---|---|
| < 6 months | 5 | 2.1 |
| 6-12 months | 26 | 11.0 |
| 1-3 years | 87 | 36.9 |
| > 3 years | 118 | 50.0 |

Table 9.2 Interference with everyday life of current problem

| | Frequency | Percent |
|---|---|---|
| None | 2 | 0.8 |
| Slight | 35 | 14.8 |
| Moderate | 94 | 39.8 |
| Severe | 105 | 44.5 |

Table 9.3 Length of time on medication for current problem

| | Frequency | Percent |
|---|---|---|
| None | 91 | 38.6 |
| 1 year or less | 67 | 28.4 |
| 1-3 years | 34 | 14.4 |
| > 3 years | 44 | 18.6 |

For individuals taking medication, comfort ($t(234) = 4.24$, $p < .001$) and emotional discomfort scores ($t(234) = 5.28$, $p < .001$) were significantly higher, but not entitlement and achievement. Self-esteem was also significantly poorer in the medication group ($t(224) = 2.73$, $p < .01$). Likewise, comparing severe with slight-moderate problem ratings found that comfort ($t(234) = 3.13$, $p < .01$), emotional discomfort ($t(234) = 5.60$, $p < .001$), and self-esteem scores ($t(224) = 4.77$, $p < .001$) were significantly higher in the severe problem group. Medication use was unrelated to problem length ($\chi^2(1) = 0.38$, n.s.) but was related to problem severity ($\chi^2(1) = 4.89$, $p < .05$). Only low self-esteem differentiated individuals with problems of more than four years from more recent problems ($t(224) = 1.20$, $p < .05$), and between in-patient/day-patient and outpatient treatment history ($t(227) = 1.99$, $p < .05$). The latter was not related to length or severity of problem. Partial correlations between frustration-discomfort and emotion self-rating, controlling for self-esteem, and self-esteem with emotion self-rating, controlling for frustration-discomfort, are shown in table 9.4.

Table 9.4 Partial correlations between frustration-discomfort scores and self-rated emotions (controlling for self-esteem), and between self-esteem and self-rated emotions (controlling for frustration-discomfort)

| | Comfort | Entitlement | Emotional Discomfort | Achievement | Rosenberg Self-esteem |
|---|---|---|---|---|---|
| Anxiety | .16* | .08 | .18** | .22*** | -.14* |
| Depression | .23*** | .24*** | .25*** | .19** | -.31*** |
| Jealousy | .11 | .24*** | .19** | .01 | -.10 |
| Guilt | .07 | .15* | .31*** | .17** | -.28*** |
| Anger | .10 | .23*** | .28*** | .17** | -.03 |
| Hurt | .07 | .22*** | .32*** | .09 | -.22*** |
| Tension | .13 | .16* | .21** | .24*** | -.12 |
| Embarrassment | .06 | .17* | .15* | .02 | -.22*** |

N = 224 ***p < .001, **p < .01, *p < .05

## 9.4 OUTCOME DATA

### 9.4.1 THERAPY ATTENDANCE

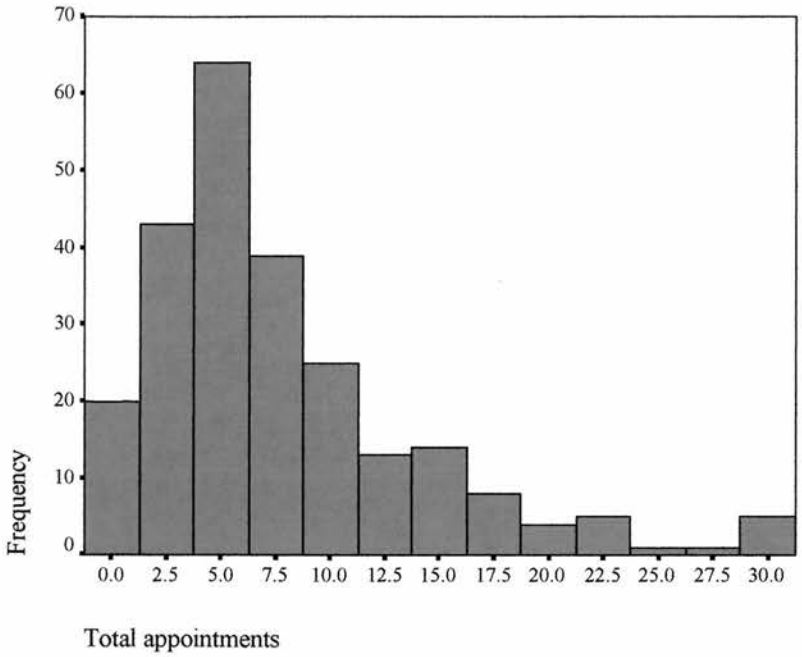
Attendance data are presented in table 9.5. The total DNA rate for all appointments was 21.2%. Excluding clients who never attended the initial session, the DNA rate for other appointments was 20.4%. Individuals who failed to attend the initial appointment had significantly higher Trait Anger scores (Mann-Whitney U (158,16) = 611, p < .001) and higher entitlement scores, although this just failed to reach significance (U (158,16) = 936, p = .08). These two variables were also significantly related to drop out during therapy.

Table 9.5 Attendance data

| | Frequency | Percent |
|---|---|---|
| Completed therapy | 158 | 65.3 |
| Dropped-out | 68 | 28.1 |
| DNA initial session | 16 | 6.6 |

The distribution of attended appointments was very positively skewed (Kolmogorov-Smirnov Z = .21, p < .001). Thus, 86% of clients were treated within 12 sessions (median = 5) although four (2%) outlying clients (Z > 3.29) together accounted for over 12% of total therapy sessions, each averaging 47 appointments (figure 9.1). Three of this group showed very high total frustration-discomfort scores (above 80$^{th}$ percentile), and particularly high comfort scores (above 90$^{th}$ percentile). This is shown graphically in figure 9.2 To reduce distortion in the statistical analyses they were given appointment values just above the next extreme score (Tabachnick & Fidell, 2000).

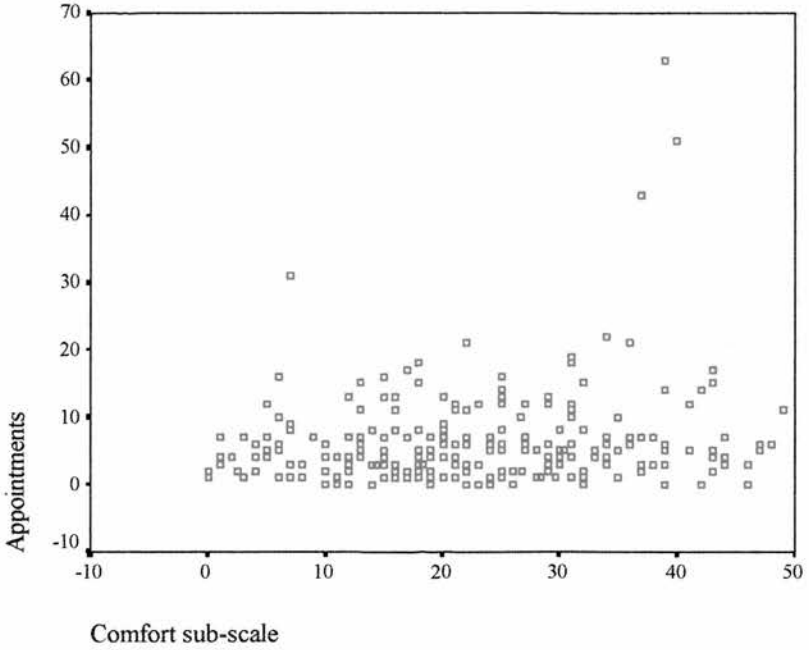
Figure 9.1 Total appointments (outliers rescored as 30)




Comfort had a weak but significant correlation with sessions attended, which remained significant after removing the four outliers (r (226) = .16, p < .05), as did self-esteem (r (218) = -.15, p < .05). Anxiety (r (224) = 0.14, p < .05) and depression (r (223) = .17, p < .01) were also significantly correlated with sessions attended. Interestingly, individuals on medication (t (220) = 3.61 p < .001) and those with problem length over three years (t (221) = 2.26 p < .05) attended significantly more sessions, but the problem severity

rating was not significant (t (219) = 1.27, ns). Higher attendance was also correlated with the 'medication' (r (226) = .19, p < 0.01) and 'task avoidance' items (r (226) = .19, p < .01) on the coping questionnaire. The relationship between medication and sessions attended remained significant when controlling for problem length (pr (221) = .22, p < .001) and depression/anxiety scores (pr (223) = .21, p < .01), indicating that the relationship was not due to greater emotional disturbance. Similar results were found with non-parametric tests, and using the total number of sessions including missed appointments.

Figure 9.2 Scattergram showing number of sessions attended and comfort scores




## 9.4.2 THERAPY DROPOUT

Of those patients who attended, 30% failed to complete therapy. Failure to complete was significantly related to higher emotional discomfort (t (224) = 1.97, p < .05) and entitlement scores (t (224) = 2.43, p < .05), but not comfort (t (225) = 1.45, ns), achievement (t (225) = 1.22, ns), or self-esteem (t (216) = .68, ns). Dropouts from

therapy also had significantly higher anger scores (t (224) = 3.84, p < .001), but did not differ on anxiety or depression. Dropout was significantly higher for younger patients (t (240) = 2.24, p < .05), but unrelated to gender, the length or severity of problems. There was no significant difference between high and low self-esteem quartiles in terms of dropout ($\chi^2$ (3) = 3.28, ns).

A hierarchical logistic regression was conducted to test whether anger mediated the relationship between irrational beliefs and overall dropout, including failure to initially attend. Anger was entered on step 1 and then the two frustration-discomfort beliefs on step 2 (table 9.7). The model was significant (-2LL = 296.47, $\chi^2$ (3) = 16.02 p = .001), with anger a significant predictor of overall dropout accounting for 9% of the variance. However, the two irrational beliefs were no longer significant when anger was entered on the first step, indicating these beliefs were fully mediated by anger.

Table 9.7 Logistic regression predicting overall dropout

| | B | SE | Wald $\chi^2$ |
|---|---|---|---|
| *Criterion variable:* | | | |
| *Overall dropout* | | | |
| 1st step | | | |
| TAS | -.08 | .02 | 13.08*** |
| 2nd step | | | |
| TAS | .71 | .03 | 7.60** |
| Entitlement | -.01 | .02 | 0.01 |
| Emotional discomfort | .02 | .02 | 1.43 |

N = 242 *** p < .001, ** p < .01

Therapist classification of main problem, completed at the end of therapy, is shown in table 9.8. As expected, analysis by problem category showed certain groups were more prone to therapy dropout. Although based on small numbers, the dropout rates for addiction problems were 85%, anger 47% and eating disorder 60%. In comparison, anxiety and depression had rates of 28% and 24% respectively. In the depressed group,

failure to complete therapy was significantly related to Trait Anger scores ($t(53) = 2.46$, $p < .05$) but not to higher depression, anxiety, frustration-discomfort, or lower self-esteem scores. In those patients referred for anger problems both Trait Anger ($t(32) = 2.39$, $p < .05$) and entitlement scores ($t(32) = 1.98$, $p < .05$) were significantly higher for dropouts. There were no variables that predicted dropout for anxiety problems.

Table 9.8 Therapist classification of main problem

| | Frequency | Percent |
|---|---|---|
| Anxiety | 78 | 32.2 |
| Depression | 57 | 23.6 |
| Anger | 34 | 14.0 |
| Interpersonal | 15 | 6.2 |
| Addiction | 13 | 5.4 |
| Eating disorder | 10 | 4.1 |
| Obsession | 10 | 4.1 |
| PTSD | 6 | 2.5 |
| Bereavement | 5 | 2.1 |
| Other | 14 | 5.8 |

### 9.4.3 THERAPY OUTCOME

There was no association between therapy outcome and age ($r(226) = .07$, n.s.) or gender ($t(224) = 1.10$, n.s.). Higher emotional discomfort scores had ($r(227) = -.15$, $p < .05$) a slightly better outcome, possibly reflecting better improvement rates for anxiety problems (Turvey, 1997). There was no significant relationship with outcome ratings for the other frustration-discomfort sub-scales, self-esteem ($r(227) = -.04$, $p = 0.6$), medication, problem length, or problem severity.

### 9.4.4 ANALYSIS OF QUESTIONNAIRE NON-REPLIES

Unsurprisingly, the largest proportion of non-replies came from individuals who failed to attend for initial assessment (38%). Excluding these, non-replies were more likely to dropout of therapy, with 47.6% dropping out compared to 30.1% in the replying group

($\chi^2$ (1) = 9.4, p < .01). They also had significantly higher DNA rates in therapy, failing to attend 33% of appointments compared to 23% (t (328) = 3.53, p < .001). Non-replies were also discharged after fewer appointments (Mann-Whitney U (227,103) = 8347, p < .001), and had significantly poorer outcome ratings (t (328) = 6.47, p < .001), with only 40% of non-replies achieving moderate progress or better compared to 68%. Non-replies were also significantly younger (t (405) = 2.99, p < .01), but did not differ in gender. Given the association between non-attendance and frustration intolerance scores, non-replies are also likely to have had higher scores on frustration-discomfort, possibly attenuating present results.

## 9.5 DISCUSSION

Both low self-esteem and high comfort scores were significantly associated with increased number of therapy sessions. Whilst, the relationship was weak this is perhaps to be expected given the complex nature of therapy engagement. Medication use was significantly related to comfort and emotional discomfort beliefs, as well as higher attendance. These relationships are consistent with theory, since these beliefs would be expected to lengthen therapy, for instance due to reluctance to use homework tasks or the need for continuing reassurance (Dryden & Yankura, 1993).

Also consistent with expectations, emotional discomfort was related to higher therapy dropout. In this regard, comfort may be conceived as reflecting passive avoidance compared to the active avoidance prompted by emotional discomfort. Thus, discussion of 'painful topics' was cited as a reason for dropout by 30% of patients in a patient survey [1]. The different interaction of the comfort and emotional discomfort scales with engagement supports the argument for separating these two facets of frustration intolerance. Therapy dropout was also significantly associated with entitlement beliefs and this is consistent with clinical literature that has identified anger disorders as being

particularly difficult to engage in therapy (DiGuiseppe, 1995). Entitlement beliefs have also been specifically linked to premature termination in relation to narcissistic personality (Young & Flanagan, 1997). However, the results described in previous chapters suggest that the entitlement sub-scale is not significantly correlated with high self-esteem. This is also supported by the lack of a significant association between self-esteem and dropout. Whilst the failure to predict treatment outcome with any of the independent variables was disappointing, it is perhaps not unexpected given the simple outcome measure and the use of only end of therapy ratings. Assessment of outcome at longer follow up may well have been more revealing.

The pattern of relationships between self-rated emotions and beliefs was theoretically consistent. Thus, Dryden (1995b) has described hurt, which correlated with entitlement and self-esteem, as a mixture of frustration intolerance beliefs regarding deservedness and unfairness, and low self-worth. It was also expected that emotional discomfort would be associated with a range of negative affect, not just anxiety. That self-esteem is correlated with depression, embarrassment, and guilt is also of no surprise. However, the pattern of relationships with the achievement frustration sub-scale is interesting. Research on perfectionism has suggested that high standards were not associated with emotional disturbance but rather positive striving (Frost, et al., 1990). However, the present results do indicate a significant relationship between these types of perfectionistic belief and anxiety, depression, and guilt. Furthermore, they remained significant after controlling for self-esteem, indicating this relationship is not due to perfectionistic self-evaluation. Indeed, the highest partial correlation is with 'tension' with which self-esteem is unrelated. Also of interest is that entitlement was significantly related to depression, but not to anxiety, when controlling for self-esteem. Similar to the results discussed in chapter six, it suggest that 'discomfort depression' may be related to aspects of frustration intolerance separate from self-worth depression. The relationship of jealousy with entitlement but not self-esteem also underlines the specific interaction

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[1] This survey was supervised by the author and contacted 66 therapy dropouts (20 replies) from the present group.

of belief categories and problem categories. It also suggests that descriptions of jealousy, as partially deriving from insecure self-esteem, may be mistaken (Dryden & Neenan, 1995; Hauck, 1982). There was no evidence in the present results to suggest that jealousy was associated with high or low self-esteem, and when comparing self-esteem quartiles there was no significant difference in jealousy ratings.

# CHAPTER TEN

# THE REVISED FRUSTRATION-DISCOMFORT SCALE

## 10.1 INTRODUCTION

Scale construction involves a repeated sequence of investigations in which hypotheses are tested and alterations made to the model. The work on the preliminary scale had suggested a number of changes. Specifically, the preliminary scale had a complex design involving questions regarding self-worth, demandingness, and frustration intolerance. However, subsequent research had indicated that it might be as appropriate to use only frustration intolerance statements (Bond & Dryden, 2000). The achievement scale also required lengthening, and overlapping and redundant item content reduced. It also remained unclear as to whether fairness and gratification were best considered separate dimensions of entitlement or closely related facets. The purpose of the studies reported in this chapter, is the development and investigation of this revised scale.

## PART I: SCALE REDESIGN AND CONFIRMATORY ANALYSIS

### 10.2. SCALE REDESIGN AND DEVELOPMENT

#### 10.2.1 QUESTION STRUCTURE

It was decided that the original questionnaire structure was unnecessarily complex, and this was redesigned. The preliminary scale incorporated separate questions regarding both self-esteem and frustration intolerance, as well as using two sentences to refer to demandingness and frustration intolerance. Whilst the self-esteem question did enable some assessment of the two belief categories it proved impractical to differentiate between these on this basis. Rather, it was more useful to employ regression techniques

to partial out self-esteem and thus determine the unique contribution of frustration intolerance, and to filter out items with high correlations with self-esteem.

The use of a compound sentence to define irrational beliefs was based on theoretical recommendation that both elements were required (DiGiuseppe, 1996). However, this assumption has been subsequently questioned, with theoretical doubts as to whether demandingness was the central belief (e.g. O'Kelly et al., 1998). Further, a series of empirical studies led Bond and Dryden (2000) to conclude that it was secondary belief content rather than primary demands that formed 'the primary mechanism through which rational and irrational REBT beliefs affect the functionality of inferences'. It was therefore decided to use a single sentence to refer to the frustration intolerance derivative, 'I can't stand it', and dispense with the irrational demand.' The changes in the question structure enabled the instructions to be substantially simplified, which markedly improved readability. Readability analysis gave a Flesch reading ease score of 83.6% and a Flesch-Kincaid grade level of 4.2 (age 9), compared with 64% and 6.2 respectively for the preliminary test. The rating scale was also changed to 1-5 from the original 0-4 for easier numerical analysis.

### 10.2.2 ITEM GENERATION AND SUB-SCALE SELECTION

All but two sub-scale items used in the preliminary sub-scales were transferred to the new scale. Of forty-seven items, thirty-seven were used with only minor changes in wording. These mainly involved telescoping the two parts of the questions and removing the 'must' segment of the statement. A 'must' was added to one item to improve comprehension. Four questions were rewritten to increase conceptual clarity. 'I absolutely must not be let down by other people' was replaced by 'I can't tolerate being treated with a lack of consideration.' 'I absolutely must remain comfortable for as long as possible' was replaced by 'I can't stand the hassle of having to do things right now.' ' I absolutely must not be opposed when I know I'm right' was changed to 'I can't tolerate criticism when I know I'm right.' 'I absolutely must not be deprived now of the

affection I needed in the past' was reduced to 'I can't bear being deprived now of things I lacked in the past'.

Two items: 'taking time' and 'restriction', both with low communalities on the exploratory factor analysis, were not used. To increase the achievement frustration scale three new items were created: Q(12) potential, Q(17) goal frustration, and Q(35) work control. A further item, referring to intolerance of other people's behaviour, was added to the entitlement scale. Since 'past injustice' was considered an important aspect of entitlement, although having a relatively poor loading in the preliminary study, it was included again in the sub-scale. Entitlement was also split into two smaller sub-scales to test whether the concepts of fairness and gratification formed separate sub-scales. Items were allocated to these groups on conceptual grounds, with gratification defined as being blocked in obtaining a positive reward. The wording of two immediate gratification questions was simplified. 'I absolutely must not make sacrifices for the future' and 'I absolutely need to indulge myself' were condensed into 'I can't stand giving up immediate pleasures for the sake of a distant goal'.

It was thought that the preliminary emotional discomfort scale was weak on items referring to depressed mood compared to anxiety. Thus, item Q(34), continuing situation, was rewritten to emphasize the sense of hopelessness central to depressed mood. Three other items were also generated: 'I can't stand how I always seem to have a raw deal', 'I can't stand how things seem to work out for others but not for me' and 'I can't stand life being so difficult for me'. However, it was considered that these three items had considerable conceptual overlap and only the latter was finally included in the scale. The revised scale with complete items is displayed in appendix 1.

### 10.2.3 PARTICIPANTS

The participants and procedure followed that of the preliminary Frustration-Discomfort study, using both clinical and non-clinical samples. The clinic sample consisted of 573 consecutive patients referred to the adult psychology department and sent the package of questionnaires along with their first appointment. Of these 260 were returned, and following removal of spoilt questionnaires, 333 individuals in the clinical group were included in the confirmatory analysis The non-clinical population came from four samples of psychology students who completed the Frustration-Discomfort questionnaire as part of their course in abnormal psychology. Three of these were final year undergraduates, two from St Andrews and one Edinburgh University (n = 79). These groups were included with the clinical group in the confirmatory analysis. A further group of first year students (n = 49), sampled as part of the procrastination study, were included in the normative data and the discriminative analysis but, due to time constraints, not in the confirmatory analysis. Patient age and gender distribution was essentialy similar to the preliminary study, with 42% male and 58% female and mean age 37.2 (range 17-74). Student gender distribution was 17% male and 83% female.

### 10.2.4 MEASURES

The clinical group received the revised Frustration-Discomfort Scale, Trait Anger Scale, the HAD inventory, and the Rosenberg Self-esteem Scale. The student group received the Frustration-Discomfort Scale, Rosenberg Self-Esteem Scale, and the PASS inventory.

### 10.2.5 STATISTICAL APPROACH: STRUCTURAL EQUATION MODELING

Whilst the preliminary study had used methods of exploratory factor analysis this investigation employs confirmatory factor analysis. In this, the relationship of the measured scale items to underlying constructs is specified, although the parameters

themselves are freely estimated. This prior specification enables the hypothesised number of factors to be tested against alternative models, thus avoiding the somewhat arbitrary choice of number of factors in exploratory analysis. Another distinct advantage of this approach is that, by removing error to a specific uniqueness term, relationships between latent variables remain unaffected by measurement error.

Alternative models were suggested by the preliminary Frustration-Discomfort Scale exploratory factor analysis. This supported a multi-dimensional structure of four oblique factors, although REBT has tended to treat low frustration tolerance as a unitary construct, implying a unidimensional scale. REBT literature also describes other groups of belief regarding fairness and immediate gratification but these did not receive strong support in the preliminary study, with these items tending to load on the entitlement factor. It remained unresolved whether, with an increased range of item content, these two facets were differentiated.

Preliminary data, frequency, reliability, and correlation analyses were carried out to eliminate any items or cases that were inappropriate using criteria applied in the exploratory factor analysis. This initial item screening served as the basis for the confirmatory factor analysis of the full scale that included all satisfactory items. A second process of item selection produced final shortened version. Whilst this was informed by the preliminary data analysis it was not an ad hoc modification based on the first confirmatory analysis. Thus, two sets of confirmatory factor analyses were carried out. First, the theoretical model of Frustration-Discomfort was tested using the complete set of items from the preliminary scale. Second, analysis of the short scale version was carried out and compared to these results.

## 10. 3 RESULTS

### 10.3.1 MISSING DATA

Two patient questionnaires were returned incomplete. On preliminary analysis of the Rosenberg scale a further four cases were identified as having high difference scores and extreme scores across all questionnaires, indicating 'careless responding'. These six cases were eliminated and there were no additional outliers. Missing value analysis indicated that one item, Q(16) past injustice, had fifteen consecutive missing values due to an administrative error. The other items had a mean percentage number of missing values of .48, with only one item, Q(46) past deprivation, having more than five missing values (2.7%). Inspection of the pattern of missing data indicated that this was randomly spread across cases and therefore a group mean was used in further analysis of the Frustration-Discomfort data. In total, 333 participants were included in the confirmatory analysis: 254 patients and 79 students.

The degree of missing data and spoiled responses is indicative of the acceptability of a scale. Whilst overall response rates were essentially the same for the preliminary and revised scale, there were noticeable differences in the quality of responses. Thirteen preliminary scale cases (5%) were removed due to spoilt or missing data compared to six revised scale cases (2.3%). In addition the preliminary study had a substantially higher number of replies (9 versus 3) showing 'careless responding' on the Rosenberg and other scales.

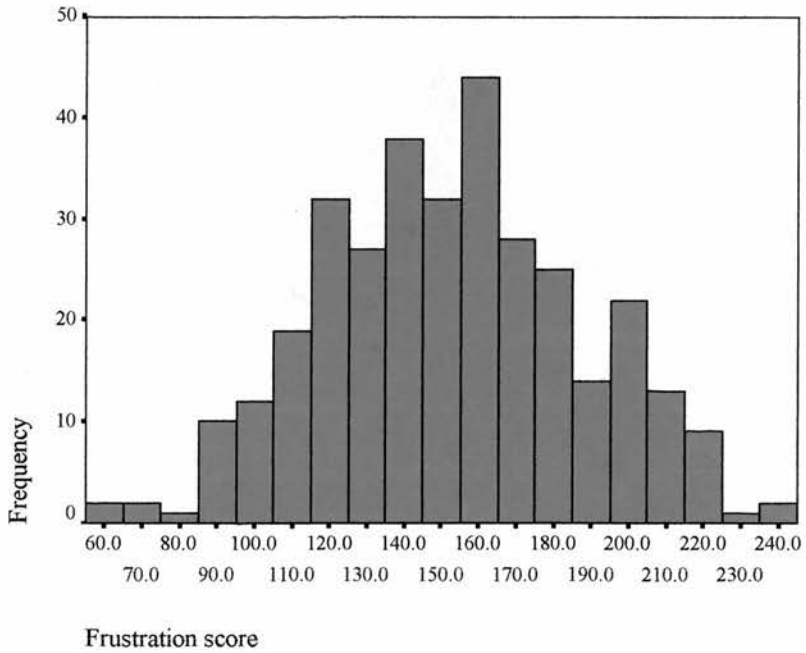
### 10.3.2 DESCRIPTIVE STATISTICS

Both patient and student groups were normally distributed, with the Kolmogorov-Smirnov test not significant. The distribution of the total Frustration-Discomfort Scale for the combined sample is displayed in figure 10.1. Of the Sub-scales, entitlement and achievement both showed normal distributions in the combined sample. Comfort had a

significantly significant level of kurtosis (z-value -2.40), and emotional discomfort had significant negative skewness (z-value -3.26) and kurtosis (z-value -3.20). However, these deviations are modest and visual examination of the distributions did not suggest important deviations from normality.

Visual inspection of individual item distributions also indicates that there were no marked departures from normality. Only two items, Q(10) craziness and Q(26) effort, showed a standard error ratio outside the ± 2 range with scores of 2.05 and 5.13. Seven items showed moderate kurtosis deviations, the highest again being Q(26) with a value of 4.77. This compares with nearly half of all the comparable items on the preliminary scale falling outside this range on these statistics. Given these modest departures it was not thought to be necessary to drop items on the basis of their distributions or transform item scores.

Figure 10.1 Frustration-Discomfort scores: Combined group



### 10.3.3 FREQUENCY ANALYSIS

Frequency analysis was used to examine the distribution of responses across the five point rating scale for each frustration question (appendix 20). All items passed the criterion of having no adjacent scale points with less than 10% of responses. Only three items just failed to reach a stricter criterion of 20%: Q(2) time pressure, Q(16) past injustice and Q(26) effort. Five of the corresponding items on the preliminary scale failed to meet this criterion. Comparing the percentage responses across the rating points for the preliminary and the revised scale showed a marked improvement in the distribution shape. As can be seen from figures 10.2 and 10.3, the overall percentage of individuals with belief ratings in the highest 'very strong' category was essentially the same, with 16.5% compared to 16.8%. However, the revised scale had considerably fewer responses in the first 'absent' category, with 11.8% compared to 20.5%. Increased endorsement of lower categories on the preliminary scale suggests response bias, with individuals choosing the zero rating as an easier option. Certainly, one reason for this careless responding would be the complexity of items (Marsh, 1986), supporting the decision to simplify the question structure and format.

Figure 10.2 Percentage of responses across the five rating points: Preliminary Frustration-Discomfort Scale

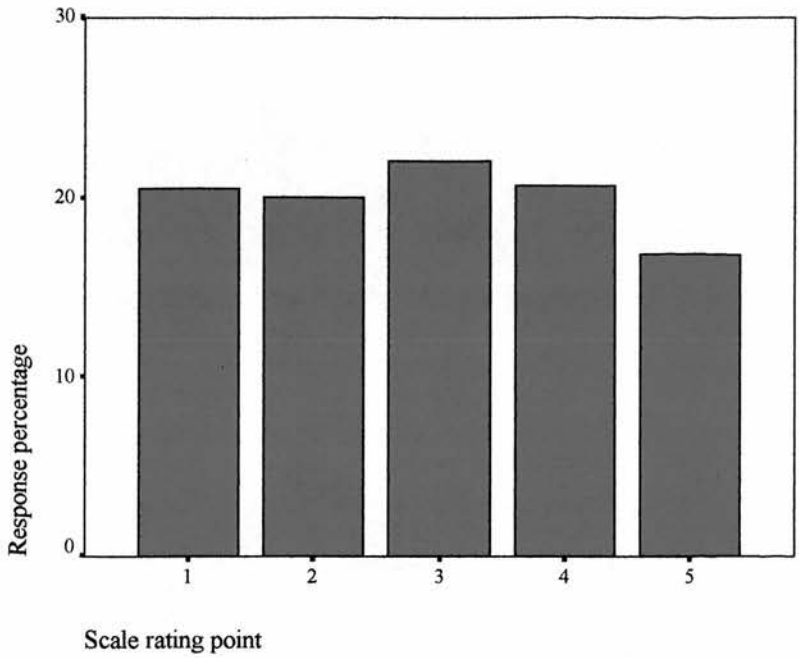
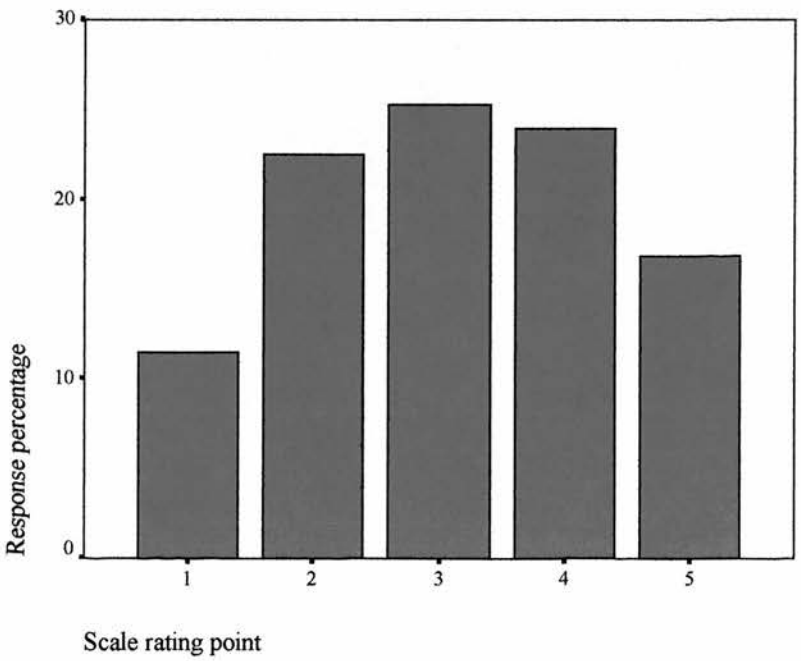



Figure 10.3 Percentage of responses across the five rating points: Revised Frustration-Discomfort Scale



### 10.3.4 FULL SCALE: RELIABILITY AND 'MAP' ANALYSIS

Reliability analyses were initially carried out to identify inappropriate items. The alpha for the full scale is clearly high, probably reflecting the number of items rather than indicating unidimensionality (Schmitt, 1996; Cortina 1993). All items were found to have corrected item-total values of above 0.4, both on the full and assigned sub-scales (appendix 21). An analysis based on the 'Multi-trait Analysis Program', used by Hays, Hayashi, Carson, and Ware (1988), was also conducted for both the four-factor model (appendix 22) and for the fairness and the gratification sub-scales in the five-factor model (appendix 23). The 'MAP' analysis aims to identify items that correlate higher on sub-scales other than their own predicted sub-scale. Three items showed this pattern. Q(8) unfair life had been placed on the emotional sub-scale based on the exploratory factor analysis, but was found to correlate marginally higher with the entitlement sub-scale ($r = .50$ compared to $r = .49$). It had been noted when originally placing the item that this was a complex item with aspects related to both sub-scales. However, given the reference to deservedness it was decide to place this conceptually in the entitlement scale. Likewise, on empirical grounds, Q(21) extra problems had been placed into the emotional discomfort sub-scale, and Q(31) doubts into the achievement sub-scale. However, both had loaded more strongly on the comfort sub-scale: Q(21) $r = .80$ compared to $r = .64$, and Q(31) $r = .55$ compared to $r = .43$. Conceptually it can be argued that these beliefs primarily relate to loss of comfort, and it was therefore decided to reassign these three beliefs to new sub-scales. The two items gratification items from the preliminary scale, 'sacrifices' and 'indulge' had both loaded substantially on two factors: entitlement and comfort. The new condensed item Q(36) indulgence also predictably loaded almost equally on both of these sub-scales.

The correlation analysis was recalculated. All items loaded highest on their respective sub-scales, and had adequate corrected item-total correlations, the weakest being Q(9) disorganisation. Cronbach alphas for each sub-scale were greater or equal to .85 indicating high internal consistency. The two sub-scales fairness and gratification

included in the five-factor model were also separately analysed using the 'MAP' procedure. One fairness item Q(45) criticism loaded marginally higher on the gratification sub-scale. Conceptually this item was considered to have more in common with fairness rather than gratification and was not therefore reallocated. In conclusion, there were no items that failed to reach inclusion criteria and all showed good reliability and frequency distributions. No items were therefore rejected as unsuitable for the full-scale analysis.

### 10.3.5 SHORT SCALE: ITEM SELECTION

Preliminary analysis showed that reliabilities were high, with the overall scale having an alpha of .958 and sub-scale values between .916 to .845. Whilst this represents impressive internal consistency it may also point to difficulties in other respects. In particular, alpha needs to be interpreted in relation to other parameters, such as scale length, inter-item correlations and the nature of the construct being investigated (John & Benet-Martinez, 2000). High alpha, for instance in excess of .95, may simply reflect high intercorrelations among items indicating an overlapping, narrow or redundant item content. Such scales, in which items essentially paraphrase each other, have been termed 'bloated specifics' (Cattell, 1978). Since the content range has been narrowed, these scales will show high internal validity but at the cost of reduced construct validity. To overcome this requires balancing sub-scale purity, achieved by including only items that load on a particular sub-scale, with a broader range of items. These items should adequately sample the most important aspects of a conceptual domain but avoid conceptual overlap. Block (1995) has also underlined the dangers of uncritical use of factor analysis noting that pre-selection of items with essentially the same content can artificially create factors and distort existing factors.

Therefore, particular importance was placed on reducing redundancy and conceptual overlap when deciding item selection for the final scale. All items having $r > 0.6$ intercorrelations were considered for removal. Examination of the sub-scale

intercorrelation matrix indicated only one pair of items with correlation above .70, that is Q(25) disturbed feelings and Q(13) thoughts (r = .73). It was decided that these items were assessing different, although closely interrelated, aspects. Other items with substantial correlations were: Q(40) task hassle with Q(32) freedom from hassle (r = .70), and Q(21) extra problems (r = .62); Q(39) morbid thoughts with Q(13) thoughts (r = .63) and Q(25) disturbed feeling; Q(49) difficult life and Q(34) continuing situation (r = .68); Q(30) consideration with Q(37) disrespect (r = .67) and appreciation (r = .62). Two items on the achievement scale, Q(17) goal frustration and Q(12) potential (r = .67), were felt to be different aspects of achievement frustration. In summary, Q(32) freedom from hassle, Q(21) extra problems, Q(39) morbid thoughts, Q(30) consideration, Q(37) disrespect, and Q(49) difficult life, were removed from the scale. Two further items, Q(1) painful memories and Q(11) ignored, overlapped conceptually with Q(13) thoughts and Q(27) appreciation and were also were removed.

Items that were weakly related to one sub-scale, showed evidence of complex loadings on other sub-scales, and had relatively low loadings on their predicted sub-scales, were also considered for removal. Five items that clearly fell into this category were identified and removed: Q(31) doubts, Q(4) waiting, Q(8) unfair life, and Q(36) indulgence, Q(47) disrupted routines. Final selection, following removal of all 13 items, took into account the strength of the corrected item-total correlation with each sub-scale and the need to have an acceptable range of item content. Thus, items Q(2) time pressure, Q(6) task interest, Q(9) disorganisation, Q(42) waste time, Q(48) others behaviour, Q(46) past deprivation, Q(16) past injustice, and Q(23) understanding were removed. Corrected item-total correlations being recalculated after each item was removed. In the five-factor model items (11), (16), (23), (36), (37), (46), and (48) were retained and added to the items in the entitlement sub-scale to form separate gratification and fairness sub-scales.

Thus, the final four-factor scale consisted of 28 items and the five-factor scale of 35 items, with 7 items in each sub-scale (appendix 4). There is debate as to the optimum number of items required to define a factor. Kline (1994), for instance, argues that a

reliable and valid test should have a least 10 items. However, John and Benet-Martinez (2000) note that this decision also depends on the construct being measured, the range of item content, and the trade off between reliability and practical utility.

### 10.3.6 DESCRIPTIVE STATISTICS

Corrected item-total and mean inter-item correlations for each sub-scale are presented in table 10.1. Cronbach's alpha coefficients ranged from .833 to .875 for the sub-scales, indicating good internal consistency with acceptable levels of item redundancy. The overall alpha for the four-factor model was .936, and for the five-factor .945. The two weakest items in relation to the overall scale were Q(3) gratification delay and Q(12) potential, however all items had correlations above .450. The mean inter-item correlation in not being influenced by scale length is a clearer measure of item homogeneity. Although the sub-scales are designed to measure narrower facets, none of the sub-scales exceed the level of .5 above which Briggs and Check (1986) suggest items tend to become overly redundant. The full scale mean inter-item correlation for the four-factor solution was .344 (alpha = .936). The mean inter-item correlation for the five-factor solution was .333 (alpha = .945). This is well within the optimal range of item homogeneity between .2 to .4 that Briggs and Check suggest offer the best balance between bandwidth and fidelity. This indicates that the scale adequately represents the complexity of the frustration intolerance concept.

Analysis of the sub-scale distributions for the total sample showed that comfort had a significant positive skew (2.24) and emotional discomfort a negative skew (-2.29). Predicable, the patient group was negatively skewed on emotional discomfort and students positively skewed on comfort scores, but both these sub-scales had normal distributions in the overall sample. Since the level of skewness was mild, no transformations were considered. There was one outlier on the fairness scale (case 708), a very low scoring student which was retained.

Table 10.1 Shortened scale: Corrected item-total correlation and alpha

## COMFORT

| | |
|---|---|
| 14 I need the easiest way around problems; I can't stand making a hard time of it | .602 |
| 19 I can't stand doing tasks that seem too difficult | .666 |
| 22 I can't stand doing tasks when I'm not in the mood | .623 |
| 26 I can't stand having to push myself at tasks | .701 |
| 29 I can't stand the hassle of having to do things right now | .633 |
| 40 I can't stand doing things that involve a lot of hassle | .724 |
| 44 I can't stand having to persist at unpleasant tasks | .637 |

Alpha .875 Mean inter-item correlation .500

## GRATIFICATION

| | |
|---|---|
| 3 I can't stand having to wait for things I would like now | .559 |
| 7 I can't stand it if other people act against my wishes | .621 |
| 11 I can't tolerate being overlooked | .594 |
| 15 I can't bear it if other people stand in the way of what I want | .677 |
| 33 I can't stand having to give into other people's demands | .591 |
| 36 I can't stand giving up immediate pleasures for the sake of a distant goal | .536 |
| 46 I can't bear being deprived now of things I lacked in the past | .563 |

Alpha .838 Mean inter-item correlation .428

## FAIRNESS

| | |
|---|---|
| 16 I can't bear to have been treated unjustly | .494 |
| 23 I can't stand being left in the dark with no explanations | .521 |
| 27 I can't tolerate being taken for granted | .651 |
| 37 I can't tolerate being treated with disrespect | .635 |
| 41 I can't stand having to change when others are at fault | .691 |
| 45 I can't tolerate criticism especially when I know I'm right | .552 |
| 48 I can't tolerate other people's bad or stupid behaviour | .529 |

Alpha .833 Mean inter-item correlation .415

## ENTITLEMENT

| | |
|---|---|
| 3 I can't stand having to wait for things I would like now | .499 |
| 7 I can't stand it if other people act against my wishes | .632 |
| 15 I can't bear it if other people stand in the way of what I want | .683 |
| 27 I can't tolerate being taken for granted | .547 |
| 33 I can't stand having to give into other people's demands | .625 |
| 41 I can't stand having to change when others are at fault | .665 |
| 45 I can't tolerate criticism especially when I know I'm right | .581 |

Alpha .846 Mean inter-item correlation .415

Table 10.1 (continued) Shortened scale: Corrected item-total correlation and alpha

**EMOTIONAL DISCOMFORT**

| | |
|---|---|
| 5 I must be free of disturbing feelings as quickly as possible; I can't bear if they continue | .646 |
| 10 I can't bear to feel that I am losing my mind | .600 |
| 13 I can't bear to have certain thoughts | .728 |
| 18 I can't stand situations where I might feel upset | .613 |
| 25 I can't bear disturbing feelings | .756 |
| 34 I can't get on with my life, or be happy, if things don't change | .570 |
| 43 I can't stand to lose control of my feelings | .585 |

Alpha .867 Mean inter-item correlation .485

**ACHIEVEMENT FRUSTRATION**

| | |
|---|---|
| 12 I can't stand being prevented from achieving my full potential | .604 |
| 17 I can't bear the frustration of not achieving my goals | .604 |
| 20 I can't tolerate lowering my standards even when it would be useful to do so | .565 |
| 24 I can't bear to move on from work I'm not fully satisfied with | .591 |
| 28 I can't stand doing a job if I'm unable to do it well | .581 |
| 35 I can't stand feeling that I'm not on top of my work | .602 |
| 38 I can't tolerate any lapse in my self-discipline | .588 |

Alpha .839 Mean inter-item correlation .427

## 10.4 CONFIRMATORY FACTOR ANALYSIS

### 10.4.1 MODEL SPECIFICATION

Two sets of five models were tested. The first model was a unidimensional model in which all the items were assumed to load on a general construct of 'low frustration tolerance'. The two-factor model had comfort and emotional discomfort loading on a 'discomfort' factor, and entitlement and achievement loading on a 'frustration' factor. The four-factor model was the solution most strongly supported by the exploratory factor analysis. A five-factor model split the entitlement sub-scale into two further sub

groups, relating to fair treatment from others and gratification. The exploratory factor analysis indicated moderately high intercorrelations between all sub-scales, therefore all

models were oblique with no orthogonal solutions tested. These models were also compared with their equivalent model using the shortened scale. The measurement model was tested using confirmatory factor analysis implemented by the AMOS 4 program (Arbuckle & Wothke, 1999). This employs maximum likelihood estimation and, with only minimal deviations from normality in the present data, this method is robust and appropriate. The sample size of 333 was above the recommended level of 200 subjects (Tabachnick & Fidell, 2000), and able to achieve adequate power levels (MacCallum, Brown, & Sugawara, 1996).

The adequacy of the competing models was evaluated using six different fit indices: (1) The most frequently used measure of overall fit is the model chi-square, with a non-significant $\chi^2$ indicating a good fit: (2) The $\chi^2$ divided by the degrees of freedom. As a rough rule of thumb, a ratio of between 2 to 3 suggests a good fitting model (Carmines & McIvor, 1981); (3) The comparative fit index (CFI: Bentler, 1990). An incremental fit index producing a statistic between 0 and 1, with values above .90 regarded as indicating adequate fit, and above .95 as a good fit (Bentler & Bonett, 1980); (4) The root mean square of approximation (RMSEA; Browne & Cudeck, 1993). A non-incremental fit index that attempts to correct for inadequacy of the $\chi^2$ with large samples. Values over .1 should lead to rejection of the model, those from .05 to .08 are acceptable, and values below .05 indicate a close fit to the data. Tighter criteria have been recently recommended with a cut-off of .95 for CFI and .06 for RMSEA (Hu & Bentler, 1999). Lastly, (5) the degree of parsimony was also taken into account. The Tucker-Lewis Index (TLI; Tucker & Lewis, 1973) is influenced by model parsimony, and a TLI score of above .9 is regarded a reasonable fit; (6) The Akaike Information Criterion (AIC; Akaike, 1987) is a relative measure that penalises complexity, with poor fitting and complex models obtaining higher values.

## 10.4.2 RESULTS: FULL SCALE

The chi-square test was significant in all of the models indicating that there were discrepancies between the models and the data. However, frequently it is the case that minor variations in fit will produce significant $\chi^2$ statistics (Hu & Bentler, 1995). Examination of goodness-of-fit indices (table 10.2) indicates that the one and two factor models did not pass the more stringent criteria for RMSEA and CFI. This suggests that, although the models were adequate, they nevertheless had a relatively poor fit to the data. Both the four and five factor models proved to be excellent fit on these criteria, with only slight differences between the statistics for these two models. Since the models are nested, formal comparison of the two models was conducted using the $\chi^2$ difference test. This indicated that the five factor model, although slightly more complex, was a significant improvement on the four factor model ($\chi^2$ diff = 110.96, df = 3, $p < .001$). Nevertheless, the four and five factor models do not markedly differ in model fit. As Wegener and Fabrigar (2000) note, a more complex model is only to be preferred if it substantially improves model fit or theoretically understanding. Examination of the factor correlation matrix in reveals high intercorrelations between factors (table 10.3). In particular, the two entitlement factors share over 70% of their variance ($r = .84$), with a very high corrected correlation of .99.

Table 10.2 Full scale: Fit indices for competing models

| Model | $\chi^2$ | df | $\chi^2$/ df | CFI | TLI | RMSEA | AIC |
|---|---|---|---|---|---|---|---|
| Single factor | 3931.09 | 1127 | 3.49 | .926 | .932 | .087 | 4225.1 |
| Two factor | 3297.64 | 1126 | 2.93 | .943 | .947 | .076 | 3593.6 |
| Four factor | 2637.13 | 1121 | 2.35 | .963 | .960 | .064 | 2943.1 |
| Five factor | 2526.17 | 1118 | 2.26 | .966 | .962 | .062 | 2838.2 |

The four-factor standardised loadings are shown in table 10.4. Two items had low squared multiple correlations: Q(16) past injustice and Q(36) indulgence. All loadings were statistically significant for every analysis. All items had substantial loadings on

their sub-scales (i.e. above .45) and only one item, Q(9) disorganisation, was below .5. Squared multiple correlations (SMC) are also presented for each item. The squared multiple correlation represents the proportion of an items variance that is accounted for by its predictors. The factor loadings for the five-factor model are shown in table 10.5. Four items had low squared multiple correlations, suggesting lack of fit (i.e. < 0.3): Q(6) Task interest, Q(4) waiting, Q(8) unfair life, and Q(9) disorganised. Factor inter-correlations are shown in tables 10.3.

Table 10.3 Full scale factor inter-correlations: Five-factor model

| | Comfort | Gratification | Fairness | Emotional Discomfort | Achievement |
|---|---|---|---|---|---|
| Comfort | * | | | | |
| Gratification | .72 | * | | | |
| Fairness | .53 | .84 | * | | |
| Emotional | .75 | .67 | .60 | * | |
| Achievement | .62 | .73 | .68 | .68 | * |
| Entitlement | .59 | * | * | .56 | .60 |

All correlations $p < .001$

Table 10.4 Full scale factor loadings: Four-factor model

| Item | Factor I | Factor II | Factor III | Factor IV | SMC |
|---|---|---|---|---|---|
| Comfort (I) | | | | | |
| 2 | .588 | | | | .345 |
| 6 | .532 | | | | .283 |
| 14 | .681 | | | | .464 |
| 19 | .689 | | | | .474 |
| 21 | .796 | | | | .636 |
| 22 | .638 | | | | .407 |
| 26 | .744 | | | | .554 |
| 29 | .654 | | | | .428 |
| 31 | .581 | | | | .340 |
| 32 | .777 | | | | .603 |
| 40 | .805 | | | | .647 |
| 44 | .676 | | | | .457 |
| 47 | .625 | | | | .391 |
| Entitlement (II) | | | | | |
| 3 | | .547 | | | .300 |
| 4 | | .520 | | | .478 |
| 8 | | .536 | | | .288 |
| 11 | | .656 | | | .431 |
| 15 | | .710 | | | .505 |
| 16 | | .545 | | | .297 |
| 23 | | .573 | | | .328 |
| 27 | | .688 | | | .473 |
| 30 | | .672 | | | .452 |
| 33 | | .667 | | | .445 |
| 36 | | .540 | | | .292 |
| 37 | | .662 | | | .438 |
| 41 | | .715 | | | .511 |
| 45 | | .613 | | | .376 |
| 46 | | .583 | | | .340 |
| 48 | | .581 | | | .338 |
| Emotional discomfort (III) | | | | | |
| 1 | | | .607 | | .368 |
| 5 | | | .692 | | .479 |
| 10 | | | .636 | | .405 |
| 13 | | | .802 | | .644 |
| 18 | | | .686 | | .470 |
| 25 | | | .818 | | .669 |
| 34 | | | .644 | | .414 |
| 39 | | | .742 | | .551 |
| 43 | | | .630 | | .397 |
| 49 | | | .684 | | .468 |
| Achievement (IV) | | | | | |
| 9 | | | | .489 | .239 |
| 12 | | | | .640 | .410 |
| 17 | | | | .639 | .408 |
| 20 | | | | .611 | .374 |
| 24 | | | | .642 | .412 |
| 28 | | | | .660 | .436 |
| 35 | | | | .669 | .448 |
| 38 | | | | .692 | .479 |
| 42 | | | | .553 | .306 |

Table 10.5 Full scale factor loadings: Five-factor model

| Item | Factor I | Factor II(a) | Factor II(b) | Factor III | Factor IV | SMC |
|---|---|---|---|---|---|---|
| Comfort (I) | | | | | | |
| 2 | .588 | | | | | .346 |
| 6 | .536 | | | | | .287 |
| 14 | .681 | | | | | .464 |
| 19 | .689 | | | | | .474 |
| 21 | .796 | | | | | .634 |
| 22 | .639 | | | | | .408 |
| 26 | .743 | | | | | .552 |
| 29 | .657 | | | | | .432 |
| 31 | .581 | | | | | .337 |
| 32 | .777 | | | | | .603 |
| 40 | .803 | | | | | .644 |
| 44 | .677 | | | | | .459 |
| 47 | .625 | | | | | .391 |
| Gratification (IIa) | | | | | | |
| 3 | | .637 | | | | .405 |
| 4 | | .546 | | | | .288 |
| 7 | | .717 | | | | .514 |
| 11 | | .656 | | | | .430 |
| 15 | | .722 | | | | .521 |
| 33 | | .687 | | | | .472 |
| 36 | | .571 | | | | .326 |
| 46 | | .607 | | | | .369 |
| Fairness (IIb) | | | | | | |
| 8 | | | .529 | | | .280 |
| 16 | | | .551 | | | .303 |
| 23 | | | .591 | | | .349 |
| 27 | | | .748 | | | .559 |
| 30 | | | .738 | | | .545 |
| 37 | | | .737 | | | .543 |
| 41 | | | .734 | | | .539 |
| 45 | | | .595 | | | .354 |
| 48 | | | .587 | | | .345 |
| Emotional discomfort (III) | | | | | | |
| 1 | | | | .607 | | .368 |
| 5 | | | | .691 | | .478 |
| 10 | | | | .636 | | .404 |
| 13 | | | | .802 | | .643 |
| 18 | | | | .686 | | .471 |
| 25 | | | | .818 | | .670 |
| 34 | | | | .643 | | .414 |
| 39 | | | | .742 | | .551 |
| 43 | | | | .630 | | .397 |
| 49 | | | | .684 | | .468 |
| Achievement (IV) | | | | | | |
| 9 | | | | | .489 | .239 |
| 12 | | | | | .640 | .409 |
| 17 | | | | | .639 | .408 |
| 20 | | | | | .612 | .374 |
| 24 | | | | | .642 | .412 |
| 28 | | | | | .660 | .436 |
| 35 | | | | | .669 | .447 |
| 38 | | | | | .692 | .479 |
| 42 | | | | | .553 | .306 |

### 10.4.3 RESULTS: SHORT SCALE

No ad-hoc changes were made to the scale, with item selection based on preliminary analysis and conceptual considerations and independent of the full scale confirmatory analysis. This enabled comparison of the shortened and full-scale model fit.

As in the first confirmatory analysis, whilst all models had significant $\chi^2$ other fit indices indicated that the four and five-factor models were both good fits to the data (table 10.6). The one and two factor models showed a considerably poorer fit, with both the $\chi^2$ ratio and the RMSEA values indicated unacceptable degrees of fit. Comparison of RMSEA values and confidence intervals of the four and five factor models showed considerable overlap (54-66; 55-65), suggesting only marginal differences in the degree of fit. However, the AIC value is markedly lower in the four-factor model. A smaller value on this measure indicates a good fit with greater parsimony and a model less prone to overfitting (Hair et al., 1998). This suggests that the four-factor model would be preferred on grounds of parsimony. In other words, the added information gained from increasing the number of factors is outweighed by the increased complexity of the model.

Table 10.6 Short scale: Fit indices for competing models

| Model | $\chi^2$ | df | $\chi^2$/ df | CFI | TLI | RMSEA | AIC |
|---|---|---|---|---|---|---|---|
| Single factor | 1531.51 | 350 | 4.38 | .949 | .940 | .101 | 1699.5 |
| Two factor | 1224.90 | 349 | 3.51 | .962 | .956 | .087 | 1394.9 |
| Four factor | 758.46 | 344 | 2.21 | .982 | .979 | .060 | 938.5 |
| Five factor | 1208.37 | 550 | 2.20 | .977 | .974 | .060 | 1438.4 |

Examination of the intercorrelation between the sub-scales is also helpful in comparing these models. The correlations corrected for attenuation due to unreliability are particularly informative since this enables the size of the alpha coefficient relative to overlap between the scales to be evaluated. This should be larger than the intercorrelation and if not the case than the two scales lack discrimination. All four sub-scales, although moderately intercorrelated, met this criterion. However, as can be observed in table 10.10, the correlation between the fairness and gratification five factor

model sub-scales is noticeably high (r = .72). The parameter estimate, which corrects for measurement error, between the gratification and fairness factor was .864, compared to estimates for the other factors of .560 to .716. The standardised factor loadings for both the five and four factor models were all substantial and significant, ranging from .554 to .826 (tables 10.7 and 10.8). Factor inter-correlations for the short scale are shown in tables 10.9 and 10.10. correlations between the sub-scales and the full scale were: Comfort (.65), entitlement (.67), emotional discomfort (.70), achievement (.64), fairness (.68), and gratification (.78).

Table 10.7 Short scale: factor loadings four-factor model

| Item | Factor I | Factor II | Factor III | Factor IV | SMC |
|---|---|---|---|---|---|
| Comfort (I) | | | | | |
| 14 | .669 | | | | .448 |
| 19 | .702 | | | | .493 |
| 22 | .666 | | | | .443 |
| 26 | .758 | | | | .575 |
| 29 | .672 | | | | .451 |
| 40 | .784 | | | | .615 |
| 44 | .704 | | | | .496 |
| Entitlement (II) | | | | | |
| 3 | | .559 | | | .313 |
| 7 | | .716 | | | .512 |
| 15 | | .756 | | | .572 |
| 27 | | .600 | | | .360 |
| 33 | | .707 | | | .499 |
| 41 | | .697 | | | .486 |
| 45 | | .627 | | | .393 |
| Emotional discomfort (III) | | | | | |
| 5 | | | .702 | | .493 |
| 10 | | | .632 | | .400 |
| 13 | | | .799 | | .639 |
| 18 | | | .685 | | .469 |
| 25 | | | .826 | | .682 |
| 34 | | | .619 | | .382 |
| 43 | | | .636 | | .404 |
| Achievement (IV) | | | | | |
| 12 | | | | .654 | .427 |
| 17 | | | | .652 | .425 |
| 20 | | | | .617 | .381 |
| 24 | | | | .651 | .424 |
| 28 | | | | .660 | .436 |
| 35 | | | | .666 | .443 |
| 38 | | | | .672 | .479 |

Table 10.8 Short scale: factor loadings five-factor model

| Item | Factor I | Factor II(a) | Factor II(b) | Factor III | Factor IV | SMC |
|---|---|---|---|---|---|---|
| Comfort (I) | | | | | | |
| 14 | .668 | | | | | .446 |
| 19 | .704 | | | | | .495 |
| 22 | .667 | | | | | .444 |
| 26 | .758 | | | | | .524 |
| 29 | .678 | | | | | .459 |
| 40 | .781 | | | | | .610 |
| 44 | .703 | | | | | .495 |
| Gratification (IIa) | | | | | | |
| 3 | | .579 | | | | .336 |
| 7 | | .713 | | | | .508 |
| 11 | | .658 | | | | .433 |
| 15 | | .743 | | | | .553 |
| 33 | | .688 | | | | .473 |
| 36 | | .587 | | | | .344 |
| 46 | | .612 | | | | .374 |
| Fairness (IIb) | | | | | | |
| 16 | | | .554 | | | .307 |
| 23 | | | .585 | | | .342 |
| 27 | | | .716 | | | .513 |
| 37 | | | .689 | | | .574 |
| 41 | | | .757 | | | .573 |
| 45 | | | .641 | | | .411 |
| 48 | | | .592 | | | .350 |
| Emotional discomfort (III) | | | | | | |
| 5 | | | | .700 | | .490 |
| 10 | | | | .630 | | .397 |
| 13 | | | | .800 | | .639 |
| 18 | | | | .686 | | .471 |
| 25 | | | | .825 | | .681 |
| 34 | | | | .621 | | .386 |
| 43 | | | | .637 | | .405 |
| Achievement (IV) | | | | | | |
| 12 | | | | | .658 | .433 |
| 17 | | | | | .657 | .431 |
| 20 | | | | | .616 | .380 |
| 24 | | | | | .649 | .421 |
| 28 | | | | | .657 | .432 |
| 35 | | | | | .664 | .441 |
| 38 | | | | | .671 | .450 |

Table 10.9 Sub-scales Intercorrelations: Short scale four-factor model

| | Comfort | Entitlement | Emotional Discomfort | Achievement |
|---|---|---|---|---|
| Comfort | * | **.65** | **.72** | **.56** |
| Entitlement | .56 | * | **.66** | **.71** |
| Emotional | .62 | .56 | * | **.70** |
| Achievement | .48 | .60 | .60 | * |

Corrected correlations in bold. All correlations $p < .001$

Table 10.10 Fairness and gratification intercorrelations: Short scale five factor model

| | Comfort | Emotional Discomfort | Achieve | Gratification | Fairness |
|---|---|---|---|---|---|
| Gratification | .62 | .61 | .59 | * | **.87** |
| Fairness | .46 | .54 | .57 | .72 | * |

Corrected correlations in bold. All correlations $p < .001$

10.4.4 NORMATIVE DATA

Descriptive statistics showed that men and women in the clinical group did not significantly differ on Frustration-Discomfort total scores (appendix 24). Of the sub-scale scores, only emotional discomfort was significantly higher for females ($t (252) = 2.53$, $p < .05$). This possible reflects that females also had higher anxiety scores ($t (251) = 2.39$, $p < .05$) and lower self-esteem ($t (246) = 2.50$, $p < .05$). There were no gender differences for the self-esteem scale or the Frustration-Discomfort sub-scales in the non-clinical group. Normative data are presented in appendices 25 to 28.

Unlike the preliminary scale, there was a weak but significant relationship between the total Frustration-Discomfort score and age ($r (248) = -.15$, $p < .05$). Age was also

significantly correlated with entitlement ($r(248) = -.24$, $p < .001$) and with emotional discomfort ($r(248) = -.15$, $p < .05$), indicating that these two types of belief decrease with greater maturity. The reduction in entitlement beliefs with age is consistent with the suggestion that egocentricity gradually declines with cognitive growth (Liotti, 1992). Both the fairness and gratification facets had significant relationships ( $r(248) = -.19$ and $-.28$, $p < .001$). However, was no significant relation between age and comfort ($r\ 248) = .02$) or achievement ($r(248) = -.11$).

## PART II: VALIDATION ANALYSIS

### 10.5 DISCRIMINATION BETWEEN CLINICAL AND STUDENT POPULATIONS

Independent unequal variance t-tests indicated significant differences in Frustration-Discomfort scores between the clinical and non-clinical groups (table 10.11). Mann-Whitney tests showed equivalent levels of significance. All the sub-scales differentiated between groups, compared to the preliminary scale in which entitlement was non-significant. The achievement frustration sub-scale had the least separation between groups, and this was reflected in the analysis of individual items. In the four-factor model nine items did not distinguish between the two groups: Q(12) potential, Q(17) goal frustration, Q(35) work control, Q(24) unfinished tasks, Q(15) task obstruction, Q(19) difficult tasks, Q(22) in the mood, Q(44) persistence, and Q(3) immediate gratification. This is consistent with expectations since frustrations with study and motivation are likely to be a central issue for students. Five further items also lacked discrimination in the five-factor model: Q(36) indulgence, Q(16) past injustice, Q(37) disrespect, Q(23) understanding, and Q(4) waiting. However, it is difficult to argue a similar case for these items and they possibly are just poor discriminating items.

Table 10.11 Means and standard deviations for clinical and non-clinical samples

| N | Clinical (254) | Non-clinical (124) | t |
|---|---|---|---|
| Four-factor score | 90.8 (20.7) | 76.4 (15.3) | 7.64*** |
| Comfort | 20.4 (6.5) | 17.6 (4.7) | 4.81*** |
| Entitlement | 22.1 (6.2) | 18.5 (4.4) | 4.62*** |
| Emotional discomfort | 25.6 (6.6) | 18.5 (5.1) | 11.57*** |
| Achievement | 22.7 (6.1) | 20.7 (5.0) | 3.32** |
| Five-factor score | 113.2 (25.3) | 96.3 (18.8) | 7.27*** |
| Gratification | 19.9 (6.3) | 17.4 (4.2) | 4.66*** |
| Fairness | 24.6 (5.9) | 22.1 (5.0) | 4.25*** |

***$p < .001$, **$p < .01$

Boxplots show that the two groups have overlapping sub-scales scores, apart from that of emotional discomfort (figure 10.4). This is expected since, with 74% scoring above the HAD-A cutpoint, the clinical sample is primarily represented by anxiety problems that are strongly associated with this sub-scale. It would also be expected that, for an unselected clinical group, some patients would have normal scores on particular sub-scales, and therefore overlap with the non-clinical population of which higher scoring members may also have psychological problems. Differentiation between the groups can be seen more clearly when comparing a specific clinical problem, such as anger (figure 10.5). Likewise, a psychological problem within the non-clinical population should have scores on relevant sub-scales similar to a clinical group, but significantly different from other students. Thus, students scoring above the $80^{th}$ percentile on procrastination problems on the PASS ($n = 26$), are not significantly different on comfort scores when compared to the clinical population ($t(278) = .21$, $p = .830$). However, the procrastinating students were significantly higher from other students on the comfort sub-scale ($t(122) = 3.23$, $p < .01$), and non-procrastinating students were significantly lower on comfort compared to the clinical group ($t(350) = 4.94$, $p < .001$). Interestingly, the student procrastination group also had significantly *lower* emotional discomfort scores than the clinical group ($t(278) = 4.19$, $p < .001$), supporting the argument that procrastinators are not distinguished by clinical levels of anxiety. The same results were obtained using non-parametric tests.

Figure 10.4 Boxplots of Frustration-Discomfort sub-scales for clinical and non-clinical samples

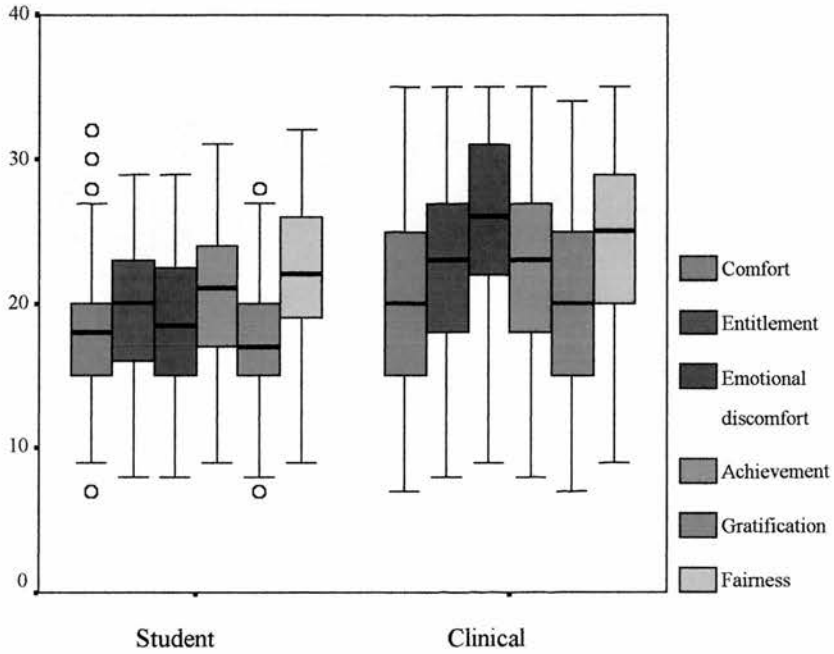
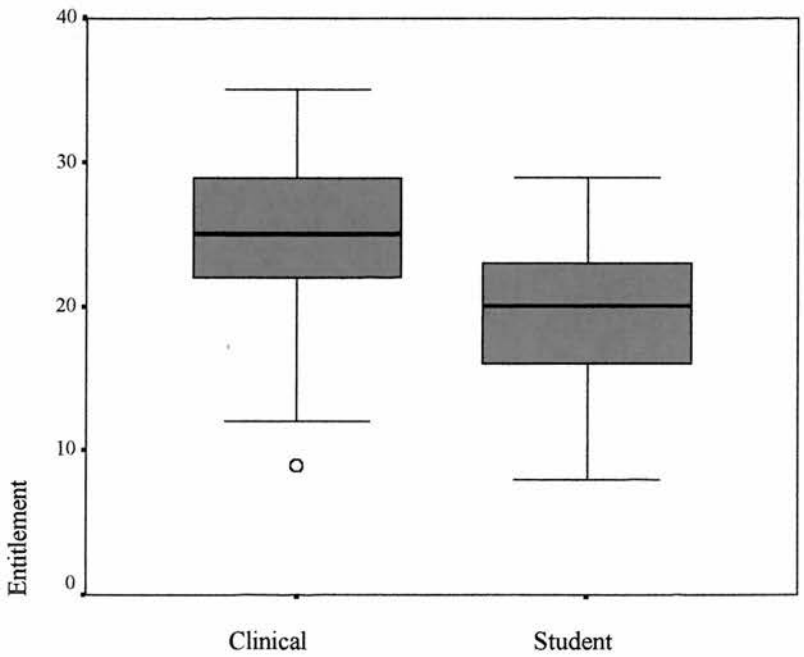



Figure 10.5 Boxplots of entitlement for clinical anger problems and non-clinical samples



## 10.6 DISCRIMINATION BETWEEN SELF-ESTEEM AND FRUSTRATION-DISCOMFORT

### 10.6.1 PRELIMINARY ANALYSIS

In order to identify response errors negative and positive sub-scores were calculated and a difference score derived. It was argued in chapter five that extreme difference scores represented careless responding and were best eliminated from analysis. Three negative extreme values on the difference scores were removed from the clinical group, whilst the student scores had no extreme values (tables 10.12 and 10.13). There were three additional missing values. The student mean was 30.86 (SD 4.83), and the clinical group mean 24.27 (SD 5.66), with higher scores representing higher levels of self-esteem. As might be expected in a predominately clinical sample the distribution was mildly negatively skewed but otherwise reasonably normally distributed (figure 10.6). As in the preliminary scale, age was weakly correlated with self-esteem (r (242) = .16).

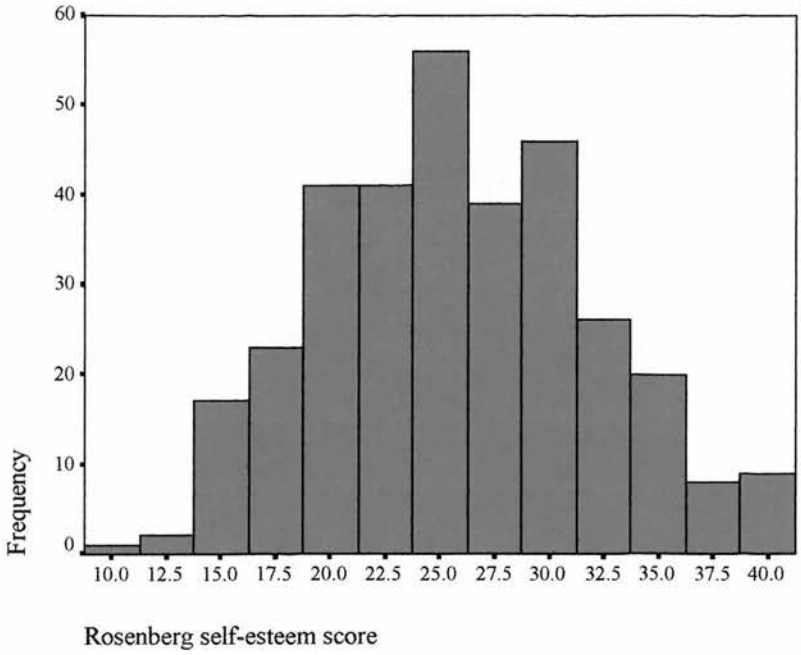
Table 10.12 Self-esteem difference scores: Clinical group

| | | Frequency | Valid Percent |
|---|---|---|---|
| Valid | -10 | 2 | .8 |
| | -8 | 1 | .4 |
| | -7 | 2 | .8 |
| | -6 | 9 | 3.6 |
| | -5 | 21 | 8.3 |
| | -4 | 25 | 9.9 |
| | -3 | 30 | 11.9 |
| | -2 | 41 | 16.3 |
| | -1 | 48 | 19.0 |
| | 0 | 29 | 11.5 |
| | 1 | 22 | 8.7 |
| | 2 | 11 | 4.4 |
| | 3 | 9 | 3.6 |
| | 4 | 1 | .4 |
| | 5 | 1 | .4 |
| Total | | 254 | |

Table 10.13 Self-esteem difference scores: Student group

| | | Frequency | Valid Percent |
|---|---|---|---|
| Valid | -5 | 3 | 3.9 |
| | -4 | 5 | 6.5 |
| | -3 | 17 | 22.1 |
| | -2 | 10 | 13.0 |
| | -1 | 13 | 16.9 |
| | 0 | 12 | 15.6 |
| | 1 | 9 | 11.7 |
| | 2 | 6 | 7.8 |
| | 3 | 2 | 2.6 |
| | Total | 77 | 100.0 |

Figure 10.6 Rosenberg Self-Esteem Scale (combined group, n = 329)




## 10.6.2 RELATIONSHIP TO FRUSTRATION-DISCOMFORT

Since the scale aimed to assess frustration intolerance, as opposed to self-worth, it was important that items showed discriminative validity between these two categories of belief. Therefore, whilst these belief interact and would be expected to be correlated, items should not correlate more highly with self-esteem than with the overall Frustration-Discomfort scale. All but two items, Q(16) past injustice and Q(42) waste

time, were significantly correlated with self-esteem, and of these, two items, Q(13) thoughts and Q(34) continuing situation, were correlated r > .50 with self-esteem. However, all items had substantially higher correlations with the Frustration-Discomfort Scale (table 10.14). the relationship between the Frustration-Discomfort sub-scales and self-esteem was weaker in the student group. Thus, the overall correlation was r (120) = -.35, p < .001, compared to r = -.43 in the clinical group.

Comparison of the preliminary and revised Frustration-Discomfort sub-scales showed that their correlations with self-esteem had increased. That this increase was relatively small suggests the more elaborate methods aimed at separating self-worth and frustration intolerance beliefs in the preliminary scale were unnecessary. Furthermore, the correlation of self-esteem with the Schema 'impaired limits' scale (r = -.37) did not significantly differ from its correlation with the Frustration-Discomfort Scale (r = -.43) when tested using Fischer's Z-transformation (Z = 1.16, ns). In contrast, the Frustration-Discomfort Scale correlates strongly with 'impaired limits' (r = .70) compared to the moderate relationship with self-esteem (r = -.43), a difference that is highly significant (Z = 5.02, p < .001). This evidence supports the discriminative validity of the Frustration-Discomfort Scale.

Table 10.14 Correlations between Rosenberg self-esteem and Frustration-Discomfort Scales (revised and preliminary)

| N | Revised scale (248) | Preliminary scale (232) |
|---|---|---|
| Comfort | -.43*** | -.36*** |
| Entitlement | -.20*** | -.17* |
| Emotional discomfort | -.49*** | -.44*** |
| Achievement | -.29*** | -.18* |
| Gratification | -.28*** | - |
| Fairness | -.16* | - |
| Full four-factor scale | -.43*** | -.36*** |
| Full five-factor scale | -.40*** | - |

*** p < .001, ** p < .01, * p < .05

## 10.7 DISCRIMINATION BETWEEN EMOTIONAL MEASURES

### 10.7.1 PRELIMINARY ANALYSIS

There was only one missing case from the HAD scale, and no univariate outliers. The distributions did not indicate marked deviation from normality. Means and standard deviations (table 10.15) are not significantly different from the preliminary study, with 74% of patients classified as having anxiety problems and 39% depression, using a HAD cut point of 11. HAD scores were unrelated to age.

Table 10.15 Descriptive statistics: HAD scale

| | Mean (SD) |
|---|---|
| Full HAD scale | 23.17 (7.91) |
| HAD-Anxiety | 13.65 (4.45) |
| HAD-Depression | 9.52 (4.54) |

Correlations between the Frustration-Discomfort Scale and the HAD scale are presented in table 10.16. All of the Frustration-Discomfort sub-scales were highly significantly related to anxiety and depression scores. Compared to the preliminary scale, correlations also substantially improved (see table 6.11 for comparison). The correlation of depression with the full scale increased from .27 to .42. Comfort increased its correlation with depression (.34 to .44) and emotional discomfort with anxiety (.49 to .60) as well as depression (.32 to .43). Likewise, achievement increased its correlation with anxiety (.31 to .40) and depression (.19 to .28).

Table 10.16 Correlations between the Frustration-Discomfort and HAD scales

| | HAD total | Anxiety | Depression |
|---|---|---|---|
| Comfort | .47*** | .39*** | .44*** |
| Entitlement | .29*** | .29*** | .22*** |
| Emotional discomfort | .59*** | .60*** | .43*** |
| Achievement | .38*** | .40*** | .28*** |
| Gratification | .33*** | .34*** | .25*** |
| Fairness | .26*** | .27*** | .18** |
| Full four-factor scale | .53*** | .52*** | .42*** |
| Full five-factor scale | .51*** | .50*** | .39*** |
| Self-esteem scale | -.51*** | -.43*** | -.47*** |

N = 253 (self-esteem N = 248) ***p < .001, **p < .01

10.7.2 ANXIETY

Frustration-Discomfort and Rosenberg Self-Esteem mean scores were significantly different between anxious and non-anxious groups (table 10.17). To determine if frustration intolerance beliefs continued to exert an influence independent from self-esteem and a shared association with negative affect the Rosenberg and HAD depression scores were partialled out. All sub-scales remained significant, with emotional discomfort highly correlated with anxiety even after self-esteem was controlled, and moderately correlated after both variables were partialled out (table 10.18). Unlike the preliminary scale, Q(10) the 'fear of mental incapacity' item was correlated with both anxiety and depression ($r(251) = .40$ and .33, $p < .001$), and this remained significantly related to anxiety ($r(250) = .21$, $p < .001$) and depression ($r(250) = .14$, $p < .05$) after controlling for negative affect.

Table 10.17 Mean and standard deviations for anxiety groups

| N | Non-anxious (65) | Anxious (188) | t |
|---|---|---|---|
| Full four-factor scale | 76.0 (21.1) | 95.9(18.0) | 7.33*** |
| Comfort | 16.7 (12.4) | 21.7 (6.2) | 5.67*** |
| Entitlement | 19.7 (6.4) | 22.9 (6.0) | 3.68*** |
| Emotional discomfort | 20.3 (7.0) | 27.4 (5.3) | 7.57*** |
| Achievement | 19.3 (5.8) | 23.8 (5.8) | 5.46*** |
| Full five-factor scale | 95.7 (25.4) | 119.1(22.5) | 6.99*** |
| Gratification | 17.1 (6.2) | 20.8 (6.1) | 4.24*** |
| Fairness | 22.3 (5.8) | 25.3 (5.7) | 3.64*** |
| Self-esteem scale | 27.1 (5.3) | 23.1 (5.3) | 6.29*** |

***p < .001

Table 10.18 Partial correlations between anxiety and Frustration-Discomfort sub-scales, controlling for self-esteem and depression

| Frustration-Discomfort | Self-esteem | Controlling for Depression | Depression + Self-esteem |
|---|---|---|---|
| Full four-factor scale | .41*** | .38*** | .34*** |
| Comfort | .39*** | .21*** | .16** |
| Entitlement | .30*** | .21*** | .20** |
| Emotional discomfort | .61*** | .49*** | .45*** |
| Achievement | .40*** | .31*** | .27*** |
| Full five-factor scale | .39*** | .37*** | .33*** |
| Gratification | .34*** | .25*** | .22*** |
| Fairness | .28*** | .21*** | .20*** |

N = 244 ***p < .001, **p < .01

### 10.7.3 REGRESSION ANALYSIS

When all the sub-scales were entered as a block, using simultaneous multiple regression, only emotional discomfort proved to be a significant predictor of anxiety (table 10.19). Most of the variance (37%) was explained by the emotional discomfort, the other three sub-scales contributing an additional 1%. With a hierarchical multiple regression analysis, when negative affect was controlled on step I, emotional discomfort remained a significant predictor ($t = 6.92$, $p < .001$, $ß = .46$), and overall the Frustration-Discomfort

block accounted for 17% of variance ($R^2_{cha}$ = .17, $F_{cha}$ (4,247) = 2.45, p = < .001). In a further hierarchical analysis, when self-esteem was entered on step I, emotional discomfort remained significant (t = 6.94, p < .001, ß = .52). Emotional discomfort also remained significant after both negative affect and self-esteem were controlled (R = .63, $R^2_{cha}$ = .22, $F_{cha}$ (4,242) = 21.88, p = < .001). Self-esteem was also a significant predictor at step I (R = .43, $R^2$ = .18, F (1,246) = 54.41, p = < .001) accounting for 18% of the variance and frustration-Discomfort an additional 21%. In comparison, when controlling for Frustration-Discomfort, self-esteem only accounted for an additional 2% ($R^2_{cha}$ = .02, $F_{cha}$ (1,242) = 7.84, p = < .001).

Table 10.19 Multiple regression analysis: Frustration-Discomfort four-factor sub-scales predicting anxiety

| Variables Entered | t | p | Beta |
|---|---|---|---|
| Comfort | 0.71 | .497 | .05 |
| Entitlement | 1.64 | .102 | -.11 |
| Emotional discomfort | 8.05 | .001 | .57 |
| Achievement | 1.73 | .084 | .12 |

Multiple R = .61
$R^2$ = .37
F (4, 248) = 37.33, p < .001

10.7.4 DEPRESSION

All Frustration-Discomfort sub-scales differentiated between depressed and non-depressed groups (table 10.20). To determine their independence from self-esteem and negative affect the Rosenberg and HAD depression scores were partialled out. All sub-scales remained significant, with comfort highly correlated with depression after self-esteem was controlled, and moderately correlated after both variables were partialled out (table 10.21).

Table 10.20 Mean and standard deviations for depression groups

| N | Non-Depressed (155) | Depressed (98) | t |
|---|---|---|---|
| Full four-factor scale | 75.5 (20.0) | 99.0 (19.4) | 5.32*** |
| Comfort | 18.7 (5.6) | 23.2(7.0) | 5.36*** |
| Entitlement | 21.1 (5.9) | 23.6 (6.4) | 3.14** |
| Emotional discomfort | 28.1 (5.4) | 24.0 (6.7) | 5.30*** |
| Achievement | 21.7 (6.0) | 24.2 (5.9) | 3.27*** |
| Full five-factor scale | 107.8 (24.2) | 122.8(23.8) | 4.81*** |
| Gratification | 24.9 (5.7) | 21.5 (6.3) | 3.34*** |
| Fairness | 24.9 (5.7) | 25.8 (5.9) | 2.68** |
| Self-esteem scale | 25.6 (5.8) | 22.1 (4.8) | 4.92*** |

N = 244 ***p < .001, **p < .01

Table 10.21 Partial correlations between depression and Frustration-Discomfort sub-scales controlling for self-esteem and anxiety

| | Self-esteem | Controlling for Anxiety | Anxiety + Self-esteem |
|---|---|---|---|
| Full four-factor scale | .27*** | .19** | .11 |
| Comfort | .28*** | .29*** | .20** |
| Entitlement | .14* | .08 | .05 |
| Emotional discomfort | .27*** | .15* | .07 |
| Achievement | .17** | .07 | .04 |
| Full five-factor scale | .25*** | .17** | .10 |
| Gratification | .14* | .08 | .04 |
| Fairness | .13 | .04 | .03 |

N = 244 ***p < .001, **p < .01, *p < .05

## 10.7.5 REGRESSION ANALYSIS

Entering all Frustration-Discomfort sub-scales as a block both emotional discomfort and comfort were significant predictors of depression accounting for 24% of variance (table 10.22). When self-esteem was entered on the first step, emotional discomfort (t = 2.28, p = .023, ß = .18) and comfort (t = 2.86, p = .005, ß = .22) remained significant. Self-esteem contributed 22% unique variance ($R^2_{cha}$ = .22, $F_{cha}$ (1,246) = 70.18, p = < .001).,

with an additional 8% by Frustration-Discomfort ($R^2_{cha}$ = .08, $F_{cha}$ (4,242) = 7.05, p = < .001). However, when negative affect is controlled on the first step, emotional discomfort fails to remain significant, although comfort (t = 4.18, p = .001, ß = .29) remained a unique predictor of depression, the Frustration-Discomfort block accounting for an additional 6% of variance ($R^2_{cha}$ = .06, $F_{cha}$ (4,247) = 5.98, p = < .001). Self-esteem also remained a significant predictor when controlling for negative affect (t = 5.21, p = .001, ß = -.29) accounting for 7% of additional variance ($R^2_{cha}$ = .07, $F_{cha}$ (1,245) = 27.18, p = < .001).

Table 10.22 Multiple regression analysis: Frustration-Discomfort four-factor sub-scales predicting depression

| Variables Entered | t | p | Beta |
|---|---|---|---|
| Comfort | 4.13 | .001 | .31 |
| Entitlement | 1.73 | .085 | -.13 |
| Emotional discomfort | 3.80 | .001 | .30 |
| Achievement | 0.47 | .641 | .03 |

Multiple R = .49
$R^2$ = .24
F (4, 248) = 19.85, p < .001

10.7.6 ANGER

There were nineteen consecutive TAS cases missing due to an administrative error but no other missing data. Three outliers had high scores but, since all were referred for treatment of anger, they were judged extreme population members. As in the preliminary analysis, the distribution was positively skewed, and a cut point of 21 (male) and 22 (female) was used to designate clinical anger. The mean was 22.0 (6.7) with no significant gender difference. Age had a significant negative correlation with anger (r (229) = -.22, p < .001). Means and standard deviations for anger and non-anger groups are presented in table 10.24. Entitlement was moderately highly correlated with trait anger, as were the two separate entitlement facets, fairness, and gratification (table 10.23). This was similar to the level of association found in the preliminary scale.

However, emotional discomfort did have an increased correlation with Trait anger, suggesting this sub-scale is measuring a greater range of emotional intolerance compared to the preliminary scale (.27 to .37) (see table 6.3 for comparisons).

Table 10.23 Correlations between Trait Anger and revised Frustration-Discomfort scales

| | |
|---|---|
| Comfort | .27*** |
| Entitlement | .55*** |
| Emotional discomfort | .37*** |
| Achievement | .33*** |
| Gratification | .49*** |
| Fairness | .52*** |
| Full Four-factor scale | .46*** |
| Full Five-factor scale | .48*** |
| Self-esteem scale | -.22 |

N = 235 ***p < .001

Table 10.24 Mean and standard deviations anger groups

| Belief scale | Non-anger | Anger | t |
|---|---|---|---|
| N | 108 | 127 | |
| Full four-factor scale | 80.9 (19.4) | 98.7 (18.0) | 7.31*** |
| Comfort | 18.8 (6.5) | 21.6 (6.7) | 3.33*** |
| Entitlement | 18.8 (5.4) | 24.8 (5.4) | 8.49*** |
| Emotional discomfort | 22.7 (6.5) | 27.0 (5.6) | 6.62*** |
| Achievement | 20.6 (5.8) | 24.2 (5.8) | 5.07*** |
| Full five-factor scale | 100.7 (23.4) | 123.4(22.1) | 7.66*** |
| Gratification | 16.8 (5.5) | 22.4 (5.7) | 7.64*** |
| Fairness | 21.8 (5.4) | 27.1 (5.1) | 7.73*** |
| Rosenberg self-esteem | 25.7 (5.8) | 23.0 (5.2) | 3.67*** |

### 10.7.7 REGRESSION ANALYSIS

A simultaneous multiple regression analysis was conducted to examine the unique variance of the four-factor sub-scales. When all the sub-scales were entered as a block only entitlement proved to be a significant predictor of trait anger (table 10.25). Most of the variance (30.4%) was explained by the entitlement sub-scale, the other three sub-scales contributed a negligible additional 1% of variance. A further regression analysis

was conducted to examine the five-factor model in predicting trait anger. Both fairness (t (5,229) = 3.82, p < .001, ß = .24) and gratification (t = 2.56, p < .05, ß = .24) were significant predictors. However, the variance explained by the five-factor model compared to the four-factor model was marginally less (R = .55, $R^2$ = .28, F = 19.53).

The variance explained for each sub-scale entered separately was: emotional discomfort 13% (R = .37, F = 36.11, p < .001), achievement 11% (R = .33, F = 28.07, p < .001), fairness 27 % (R = .52, F = 86.26, p < .001), gratification 24% (R = .49, F = 73.82, p < .001), and comfort 7% (R = .27, F = 17.98, p < .001). Thus, the fairness sub-scale was a slightly weaker predictor of anger than the combined entitlement sub-scale. Self-esteem was a significant predictor of trait anger (R = .22, $R^2$ = .05, F = 11.31, p < .001), but only accounted for 5% of the variance. When entered simultaneously with entitlement self-esteem failed to remain significant (t = 1.81, p = .07, ß = -.10).

Controlling for negative affect, by entering HAD total score on step I of a multiple regression analysis, still left the Frustration-discomfort block accounting for over 23% of the variance ($R^2_{cha}$ = .23, $F_{cha}$ (4,224) = 20.45, p = < .001), with entitlement remaining a unique predictor of anger (t = 7.82, p < .001, ß = -.57).

Table 10.25 Multiple regression analysis: Frustration-Discomfort four-factors predicting trait anger

| Variables Entered | t | p | Beta |
|---|---|---|---|
| Comfort | 1.33 | .186 | -.10 |
| Entitlement | 8.14 | < .001 | .54 |
| Emotional discomfort | 0.12 | .079 | .14 |
| Achievement | 0.58 | .755 | -.02 |

Multiple R = .56
$R^2$ = .32
Adjusted $R^2$ = .30
F (4, 230) = 26.42, p < .001

## 10.7.8 RELATIONSHIP BETWEEN FRUSTRATION INTOLERANCE, SELF-ESTEEM AND ANGER

To test the hypothesis that there was no association between the entitlement or achievement sub-scales and high self-esteem, entitlement mean scores were analysed for each quartile of the Rosenberg positive esteem sub-scale. Consistent with previous results there was a systematic *reduction* in achievement and entitlement scores with increased self-esteem (table 10.26). Lower scores on these sub-scales were also found at the extreme ends of the distribution. Thus, at the $10^{th}$ percentile both the entitlement (19.38) and achievement (18.75) mean scores remained low. The same pattern was found for the negative esteem sub-scale. Similarly, examination of Frustration-Discomfort sub-scale percentiles also revealed that at high levels of entitlement and achievement the mean total self-esteem scores are still relatively low, in comparison with the two other sub-scales and with reported population means (table 10.27). Thus, mean self-esteem for the present student group (n = 120) was 30.84 (SD = 4.8) and a non-clinical adult group was 33.04 (SD = 5.39) (Chamberlain & Haaga, 2001). A one-way ANOVA showed no significant difference between student self-esteem scores on entitlement quartiles (F (3,80) = .09, p = .965) or on achievement quartiles (F (3,228) = 1.69, p = .176). These results indicate that both in clinical and non-clinical populations the entitlement and achievement sub-scales are not associated with level of self-esteem, or specifically high self-esteem.

Table 10.26 Entitlement and achievement sub-scale means by Rosenberg Self-Esteem Scale quartiles

| | Entitlement | Achievement |
|---|---|---|
| Rosenberg Positive Self-esteem | | |
| High self-esteem | 21.00 | 20.91 |
| 3 | 21.01 | 21.88 |
| 2 | 22.62 | 23.77 |
| Low self-esteem | 23.18 | 23.43 |

N = 228

Table 10.27 Rosenberg Self-esteem scores for 10th percentile of Frustration-Discomfort sub-scales

| Sub-scales | Rosenberg self-esteem |
|---|---|
| Comfort | 20.50 |
| Entitlement | 22.86 |
| Emotional Discomfort | 21.23 |
| Achievement | 22.66 |

N = 228

The correlation between self-esteem and anger was significant, although substantially weaker in comparison with the correlation between entitlement and anger (table 10.23). Indeed, when entitlement was partialled out self-esteem was no longer significant related to anger ($r(228) = -.22$, $p < .001$; $pr = -.12$, ns).

In the preliminary scale, the self-esteem difference score was significantly correlated with frustration intolerance, with achievement frustration a unique predictor. This had suggested that the difference between the negative and positive scales might reflect criticism of personal performance rather than global self-rating. These findings were only partially replicated by the present results. Although, the difference score remained weakly correlated with total Frustration-Discomfort scores ($r(248) = -.14$, $p < .05$) and with achievement and entitlement (both: $r(228) = -.15$, $p < .05$), simultaneous multiple regression showed neither achievement or entitlement were unique predictors. Nevertheless, the difference score remained correlated with anger ($r(230) = -.17$, $p < .01$), as well as with anxiety ($r(248) = -.13$, $p < .05$). Furthermore, of the five Frustration-Discomfort items that correlated $p < .01$ with the difference score three were achievement items: Q(12) potential ($r = .26$), Q(17), goal frustration ($r = .207$), and Q(15) task obstruction ($r = .18$).

### 10.7.9 DIFFERENTIATION BETWEEN ANGER AND DEPRESSION

Preliminary scale studies results had indicated that the beliefs associated with mixed depression/anger could be distinguished from depression without anger. Specifically, the

emotional discomfort and comfort scales were significantly higher in the depressed/angry group, supporting the REBT model of two forms of depression, one primarily related to loss of self-worth and the other to frustration intolerance. Using the revised scale, the hypothesis was tested that these Frustration-Discomfort sub-scales would be significantly higher in anger/depression than in depression or anger and would differentiate between these groups.

With unequal sample size and variances, non-parametric tests were used. The anger and anger/depressed groups did not differ in mean anger, and the angry/depressed and depressed groups did not differ in depression scores. As predicted, total Frustration-Discomfort scores were significantly different between the three groups (Kruskal-Wallis $\chi^2$ (2) = 24.16, $p < .001$). Individual comparisons indicated that Frustration-Discomfort total scores were significantly higher in depressed/anger compared to anger (Mann-Whitney U (59,68) = 1230, $p < .001$), and depressed groups (U (59,32) = 432 $p < .001$). Comfort scores were significantly higher in anger/depressed compared to the anger group (U (59,68) = 1186, p = .131), and higher in anger/depressed compared to depressed group although this failed to reach significance (U (59,32) = 762, p = .131). As would be expected, entitlement scores were significantly higher in both anger groups compared to the depressed group (U (32,59) = 361, $p < .001$; U (32,68) = 570, $p < .05$), but were also significantly higher in the anger/depressed compared to the anger group (U (59,68) = 1536, $p < .05$). Emotional discomfort was significantly higher in anger/depressed group compared to either anger (U (59,68) = 1957, $p < .001$), or depressed groups (U (59,32) = 385, $p < .001$). Self-esteem was lower in the depressed group compared to the anger/depressed group, although again this failed to reach significance (U (57,30) = 666, p = .097).

In summary, the hypothesis that the combined anger/depression group would have significantly higher levels of emotional discomfort and comfort when compared to individuals in the separate categories was supported. Whilst comfort failed to reach significance, due to the small numbers involved in the depressed group, the direction was as expected.

## 10.7.10 CONVERGENT AND DIVERGENT VALIDATION

There was a strong correlation between total Frustration-Discomfort scores and the Schema impaired limits scales. Comparison with the preliminary scale intercorrelation matrix (table 10.28) shows that the correlation has increased by .10. In particular, the correlation with the schema entitlement scale has substantially increased from .34 to .60. This reflects a general increase in intercorrelations for all the Frustration-Discomfort sub-scales, with all correlations significant at $p < .001$.

Table 10.28 Intercorrelations of the Frustration-Discomfort Scale and Rosenberg Self-esteem with Schema sub-scales

| Frustration-Discomfort Scales | Schema sub-scales | | |
|---|---|---|---|
| | Both Schema sub-scales | Entitlement | Self-control |
| Comfort | .62*** | .39*** | .64*** |
| Entitlement | .66*** | .72*** | .55*** |
| Emotional discomfort | .49*** | .42*** | .56*** |
| Achievement | .42*** | .46*** | .36*** |
| Gratification | .68*** | .68*** | .60*** |
| Fairness | .57*** | .62*** | .48*** |
| Full four-factor scale | .70*** | .60*** | .65*** |
| Full five-factor scale | .71*** | .63*** | .65*** |
| Rosenberg Self-esteem | -.37*** | -.18** | -.40*** |

N= 254 (self-esteem n = 248) ***p < .001, **p < .01

The pattern of intercorrelations of the Frustration-Discomfort sub-scales with the schema scales was consistent with theoretical expectation, supporting convergent and divergent validation. Thus, comfort ($Z = 4.83$, $p < .001$) and emotional discomfort ($Z = 2.89$, $p < .001$) correlated more strongly with 'self-control', which reflects 'exaggerated emphasis on discomfort-avoidance' (McGuinn & Young, 1996), than with schema 'Entitlement', which is described as the 'insistence that one should be able to do or have whatever one wants…'. In contrast, entitlement ($Z = 4.18$, $p < .001$) and achievement ($Z = 1.94$, $p < .05$) correlated strongly with schema 'Entitlement' compared to 'self-

control'. Similarly, fairness was also differentially correlated with the two scales ($Z = 3.06$, $p < .001$), and to a lesser extent gratification ($Z = 1.97$, $p < .05$).

To assess further the validity of the Frustration-Discomfort sub-scales the schema items were placed in four groups in terms of content. The first reflected egocentricity and the second task perseverance (table 10.29). As expected, both correlated most strongly with their entitlement and comfort beliefs respectively. Interestingly, item (11) concerning 'overdoing things' was relatively weakly correlated with the Frustration-Discomfort subscales. The addictive behaviour item also had a weak relationship with the frustration-discomfort echoing the findings of the Coping Questionnaire in chapter seven. However, it was significantly correlated with emotional discomfort ($r = .31$, $p < .001$), comfort ($r = .29$, $p < .001$), and gratification ($r = .27$, $p < .001$). Unfortunately, the Schema item wording refers to several addictive behaviours, making interpretation difficult. As expected the anger items are strongly correlated with entitlement. Interestingly, the achievement sub-scale was associated with three of the egocentric schema items, and whilst these were clearly more strongly related to entitlement it does suggest an overlap between these two sub-scales in terms of egocentricity, although the beliefs involved differ.

Table 10.29 Correlation between Schema 'impaired limits' items and Frustration-Discomfort sub-scales

| Schema items | Comfort | Entitlement | Emotional Discomfort | Achievement |
|---|---|---|---|---|
| 1 Getting what I want | | .49 | | |
| 3 Doing what I want | | .55 | | .42 |
| 4 Opposed by others | | .59 | | .39 |
| 5 Told what to do | .41 | .59 | .36 | .38 |
| 7 Complete tasks | .47 | | | |
| 8 Giving up | .59 | | .43 | |
| 13 Perseverance | .56 | .40 | | |
| 14 Concentration | .51 | .35 | .46 | |
| 15 Task enjoyment | .59 | .42 | .41 | |
| 9 Gratification | .48 | .40 | .36 | |
| 12 Bored | .39 | .39 | .41 | |
| 6 Addiction | | | | |
| 11 Indulgence | | | | |
| 17 Resolutions | .44 | .35 | | |
| 19 Impulsive | | .41 | .40 | |
| 2 Angry frustration | | .60 | | |
| 16 Control temper | | .49 | .40 | |
| 10 Angry control | .39 | .55 | .40 | |
| 18 Emotion expression | | .35 | | |

N = 254. Only correlations above .35 shown, all $p < .0001$

## 10.8 DISCUSSION

The confirmatory factor analysis supported a multidimensional model of frustration intolerance. One and two-factor models were inadequate, but four and five factor models both fitted the data well. The magnitude of the difference in fit between these two models was small, and the degree of overlap as shown by the correlation coefficients

large. Furthermore, the two 'entitlement' sub-scales had corrected correlations higher than their reliability coefficients. This indicates that the two scales are correlated to an extent that it is difficult to argue, either theoretically or in terms of practical discriminative ability, that they represent distinct underlying concepts (John & Benet-Martinez, 2000). In theory, factors can always be subdivided into smaller facets, however the appropriate level of sub-division must be determined ultimately by the conceptual meaningfulness and empirical usefulness of the facets (Briggs & Cheek, 1986). Thus, the four-factor model is preferred for reasons of parsimony. However, the distinction between gratification and fairness may be important in specific areas of disturbance, although there was little difference between these facets in their relationship with the emotional measures, and no evidence of improved discrimination compared to the full entitlement scale. However, the clinical population consists of heterogeneous diagnostic groups and specific clinical groups relevant to gratification or fairness may have different relationships with the two facets. Overall, the substantial intercorrelations between factors suggest that the four dimensions may be subsumed within a single frustration intolerance construct.

Comparison of the preliminary and revised Frustration-Discomfort Scale indicated improvements in the readability, acceptability, and psychometric properties of the revised scale. There was also a strengthening of correlations with anxiety, depression, and anger, and with the convergent scales, as well as increased discrimination between clinical groups, and with a non-clinical population. Both the full scale and relevant individual sub-scales scores all showed noticeable statistical improvements. Therefore, these results suggest that restricting the irrational belief wording to frustration intolerance and omitting absolute demandingness does not reduce the relationship with psychological disturbance. Similarly, shortening the scale to seven items in each sub-scale did not result in a worse fit to the data in the confirmatory analysis. Rather, the evidence suggests that this has reduced item redundancy whilst retaining the conceptual range.

The preliminary scale analyses had indicated that the Frustration-Discomfort sub-scales were specifically related to different types of emotional disturbance. This was further supported by these results. Controlling for overlapping variance due to negative affect and self-esteem emotional discomfort remained a unique predictor of anxiety. Likewise, comfort remained a unique predictor of depression. Interestingly, achievement remained moderately correlated with anxiety when controlling for self-esteem and when controlling for negative affect. However, the relationship between achievement and depression, as in the preliminary scale, much weaker. Nevertheless, it remained significant when controlling for self-esteem, whilst not for negative affect. Achievement and anger were also moderately correlated, and also remained so when controlling for negative affect and self-esteem. This supports the construct validity of the achievement scale as representing dysfunctional beliefs rather than adaptive perfectionistic striving.

Consistent with the preliminary scale results, there was no evidence of an association between high self-esteem scores and trait anger. Indeed, findings suggest that issues of self-worth play at best only a minor role in the generation of anger. Rather, frustration intolerance and specifically beliefs relating to entitlement were the primary cognitions associated with anger. Likewise, there was no association between entitlement and high self-esteem scores. The correlation between entitlement and self-esteem scores, on both the Frustration-Discomfort and schema scales, was not only weak but also negatively related.

# CHAPTER ELEVEN

# GENERAL DISCUSSION

'When I created Rational Emotive Behaviour Therapy in 1955,
I knew exactly what it was...and wasn't. Now, I am not so sure!'

*Albert Ellis (1996a)*

## 11.1 INTRODUCTION

This research aimed to investigate the factor structure of beliefs related to frustration intolerance. A second aim was to determine if the division of beliefs into two broad categories, ego disturbance and frustration intolerance, was meaningful. That is, whether frustration intolerance beliefs were independently related to psychological disturbance. Connected with this was the investigation of the relationship of individual sub-scales with different types of psychological disturbance. In this regard, it was important to demonstrate that the Frustration-Discomfort Scale discriminated between emotional problems separate from its association with general negative affect.

## 11.2 SUMMARY OF MAIN RESULTS

### 11.2.1 SCALE DEVELOPMENT

Potential items were generated from the REBT literature and in reference to recent classification of non-ego disturbance beliefs. Items were designed to distinguish between frustration intolerance and self-worth beliefs. Following a pilot study, a final scale consisting of 74 items was produced. Prior to analysis, items were examined regarding normality, response frequency distributions, and reliability. The item discrimination from self-esteem and between student and clinical groups was also explored. These investigations led to several items being dropped.

A Principal components analysis using both varimax and direct oblimin rotations was conducted using responses from clinical and student populations. This indicated frustration intolerance was best described by four oblique factors: Comfort, emotional discomfort, entitlement and achievement. These factors partially corresponded to the content categories proposed by REBT theory. Following a series of validity studies, using sub-scales derived from these factors, a shortened scale was developed. This simplified the item structure and wording, primarily employing only frustration intolerance beliefs. Confirmatory factor analysis was then employed to test the factor structure identified in the preliminary scale. The results showed a good fit for both four and five factors, although the four-factor model was preferred as the most parsimonious solution. Sub-scales, each containing seven items, were derived from these factors and the validity of the revised Frustration-Discomfort Scale investigated.

### 11.2.2 VALIDATION STUDY: SELF-ESTEEM

The adequacy of the self-esteem measure was examined using a structural equation modeling approach. This suggested that the scale was measuring one underlying concept, that of global self-esteem, but the difference between the negative and positive facets was meaningful. It was argued that this difference score reflected personal criticism rather than global self-condemnation. This score was uniquely predicted by achievement frustration and remained significant when controlling overall self-esteem scores and age. Anger was the only emotional measure significantly correlated with the difference score. The comfort and emotional discomfort scales had the highest correlations with low self-esteem. There was no evidence of a relationship between the entitlement or achievement sub-scales and high self-esteem.

### 11.2.3 VALIDATION STUDY: EMOTIONAL DISTURBANCE

Specific emotional disorders were uniquely associated with different dimensions of frustration intolerance, even after controlling for negative affect and self-esteem. Entitlement was uniquely associated with anger; emotional discomfort with anxiety; and comfort with depression. Individuals with co-existing anger and depression, when compared to those with separate problems, had significantly higher Frustration-Discomfort scores, particularly comfort and emotional discomfort. The relationship between anger and self-esteem was weak compared to that of anger with frustration intolerance. Achievement frustration was significantly correlated with anxiety, anger, and to a lesser extent depression. Correlations between the Frustration-Discomfort Scale, Schema, DAS, and Rosenberg Self-Esteem scales provided support for convergent and divergent validity. Apart from entitlement, all the preliminary Frustration-Discomfort sub-scales differentiated between the student and clinical groups.

### 11.2.4 VALIDATION STUDY: SELF-CONTROL

Differential relationships were found between the Frustration-Discomfort sub-scales and specific self-control problems. Total scores were significantly related to both cognitive and behavioural avoidance, with the strongest correlation with reliance on medication or routine to cope with disturbance. Emotional discomfort and entitlement, mediated respectively by anxiety/tension and anger, were significant predictors of self-harm. Self-esteem had the strongest relationship with self-harming. The relation of entitlement to self-harm was mediated by anger and was independent of self-esteem and emotional discomfort.

### 11.2.5 VALIDATION STUDY: PROCRASTINATION

Both versions of the Frustration-Discomfort Scale were differentially correlated with the PASS task aversiveness scale as compared to fear of failure, supporting convergent and

discriminative validity. Both self-esteem and comfort were significant predictor of both procrastination problems and frequency. There was evidence, although this was not found on both samples, that achievement frustration and emotional discomfort might reduce the frequency of procrastination on exams and essays. Contrary to theoretical speculation, the entitlement and gratification facets had negligible associations with procrastination.

### 11.2.6 VALIDATION STUDY: THERAPY ENGAGEMENT

Both low self-esteem and high comfort scores were significantly associated with increased number of therapy sessions. Emotional discomfort was related to higher therapy dropout, as were entitlement beliefs. Treatment outcome appeared unrelated to any of the variables.

### 11.2.7 ANALYSIS OF REVISED SCALE

Comparison of the preliminary with the revised Frustration-Discomfort Scale indicated improvements in the readability, acceptability, and psychometric properties of the revised scale. Correlations with measures of emotional disturbance and with convergent scales were stronger, and there was improved discrimination between clinical and non-clinical groups. In contrast to the preliminary scale, all Frustration-Discomfort sub-scales including entitlement were significantly higher in the clinical population. Consistent with the preliminary scale, comfort was a unique predictor of depression, emotional discomfort of anxiety, and entitlement of anger, when controlling for both negative affect and self-esteem. Also consistent with the preliminary scale, there was no relationship between either low or high self-esteem and trait anger. Similarly, results supported the finding that coexisting anger and depression showed increased emotional discomfort and comfort scores when compared to the individual problems. It was hypothesised that this reflected related to increased discomfort depression beliefs in angry/depressed individuals.

## 11.3 THE STRUCTURE OF FRUSTRATION INTOLERANCE

The conceptual structure of the individual sub-scales was supported by the research findings. Whilst the achievement sub-scale is related to the construct of perfectionism, it was argued that existing perfectionism scales, like the achievement sub-scale on the DAS, did not adequately represent dysfunctional beliefs related to frustration intolerance. Whilst some perfectionism sub-scales assessed self-evaluative beliefs, other sub-scales assessing high standards were not consistently phrased in terms of imperatives. REBT proposes that only absolute imperatives lead to dysfunction, these items would represent the preference to strive for achievement, thus confounding adaptive and dysfunctional perfectionism. Indeed, Flett and Hewitt (2002) in suggesting that self-orientated perfectionism is a more dysfunctional type of striving than conscientiousness, note that a distinction needs to be made between a desire for high standards and demands for absolute perfection. The Frustration-Discomfort achievement sub-scale was designed to measure intolerance of frustrated achievement demands, as opposed to the preference for high standards. It was hypothesised that if these beliefs were worded in terms of frustration intolerance/demandingness then a stronger relationship with psychological disturbance would emerge. This was supported by the results.

Thus, in contrast to research using the perfectionism scales, achievement was significantly related to anxiety, even when controlling for self-esteem and negative affect. However, the relationship of achievement frustration with depression was less distinct, although this was still significant after controlling for self-esteem. In comparison, research using the perfectionism scales shows that self-orientated and personal standards, the sub-scales conceptually closest to achievement frustration, have a negligible or negative relationship to depression when negative affect is controlled (Enns & Cox, 1999; Kawamura et al., 2001). Research using the Sociotropy-Autonomy Scale also shows that the autonomy sub-scale is more weakly related to depression

compared to sociotropy (Clark & Beck, 1991). Similarly, the DAS-24 dependency sub-scale remains significantly elevated following depression, but the achievement and self-control sub-scales do not (Power et al., 1995). In addition, achievement also had a moderate relationship with anger, and this was largely undiminished when controlling for self-esteem or negative affect. Therefore, the present results suggest that, in the absence of self-worth beliefs, achievement frustration may be more strongly related to tension/anxiety and angry irritability than depression. This is consistent with type-A personality research, in that this aspect of personality is one area of psychological problems characterised by excessive standards for achievement, which in turn is linked to angry hostility (Friedmann & Rosenman, 1974).

Comfort, which has previously been employed as an all-inclusive category for frustration intolerance beliefs, was defined more narrowly by the analysis. This sub-scale focused on the intolerance of difficulty and hassle, and was separated from beliefs regarding emotional discomfort. Comfort beliefs were uniquely related to depression when accounting for the overlapping variance from other sub-scales. The analysis of the relationship of depression with anger was interesting, in that several theoretical approaches have suggested two separate depression sub-types. However, the psychoanalytic (Blatt, 1982) and the Cognitive Therapy models (Beck, 1976) both describe these dimensions in relation to self-worth, differing largely in terms of whether self-worth is based on interpersonal or achievement success. In contrast, REBT proposes that a more important distinction can be made between self-worth and frustration intolerance depression. This REBT model received some support. Thus, individuals suffering from both depression and anger showed significantly higher levels of frustration intolerance, and specifically comfort and emotional discomfort, compared to individuals that were either depressed or angry.

Although emotional discomfort has similarities to anxiety sensitivity (Reiss & McNally, 1985) it aims to assess a wider range of emotions, focusing on the intolerance of discomfort rather than its feared consequences. Whilst it has been suggested that

frustration intolerance is central to anxiety disorders research regarding this is sparse (Warren & Zgourides, 1991). The present findings are important in establishing this relationship, and show that intolerance of emotional discomfort was uniquely associated with anxiety even after controlling for negative affect and self-esteem. These results were confirmed using the revised scale with both studies indicated that, compared to self-esteem, emotional discomfort was by far the strongest predictor of anxiety problems. As expected, cognitive and behavioural avoidance in general was associated with both comfort and emotional discomfort beliefs. Whilst beliefs related to control were included in emotional discomfort, the exploratory analysis did not support a separate factor for control and uncertainty beliefs, and these items loading on a number of different content categories.

REBT theory has viewed problems of self-control, in regards to frustration intolerance, as aimed at the relief of discomfort (e.g. Wessler & Wessler, 1980). However, Dryden and Yankura (1993) have emphasised a further aspect, that of attaining positive gratification, and indeed a 'need' for excitement has been linked with self-control problems such as compulsive gambling (Walker, 1992). The two items related to excitement/buzz had poor correlations with the other Frustration-Discomfort items, although the indulgence item was significantly related to comfort eating, overspending and alcohol use. Since frustration intolerance statements were largely worded in terms of deprivation rather than indulgence, it could be argued that purely positive gratification beliefs have not been specifically assessed. Indeed, positive gratification may be best assessed separately from frustration intolerance beliefs, perhaps in terms of 'needs'. In terms of the present scale, whilst intolerance of gratification delay and deprivation were found to be important aspects of frustration intolerance, the evidence indicated that these were best considered facets of entitlement. In other words, 'I must not be deprived of what I want' covers a range of associated demands including those regarding fairness and intolerance of gratification frustration.

Other areas of research have implicated aspects of frustration intolerance as important in 'impulsive' disorders. For instance, Lacey and Evens (1986) argue that 'multi-impulsive personality' involves the failure of impulse control, and that this failure is related to difficulties in coping with disturbing emotions. However, the present research suggests that problems of self-control may be better conceived in terms of interrelated patterns of belief, rather than as a general impulsive trait. Similarly, other theoretical models have tended to rely on one dimension of beliefs, or have focused on their relation with self-worth rather than frustration intolerance (Heatherton & Baumeister, 1991). However, comfort or emotional discomfort beliefs alone do not fully explain the connections between self-control problems. For example, it is unclear from the impulsivity model the relationship of anger with such a wide range of 'impulsive' behaviours (Milligan & Waller, 2001). In this respect, the frustration intolerance model would point to the relationship of anger with entitlement, which in turn is associated with other frustration intolerance beliefs. The research on self-harming suggests that the combination of anger and emotional discomfort may be central to this pattern of behaviour. Frustration intolerance beliefs have in common, not overwhelming impulsive desire, but the intolerance of circumstance whether these are unpleasant emotions or frustrating situations. Clearly, self-control problems are likely to involve a number of related sub-tasks associated with different types of belief. These may include the effort of thinking about longer-term consequences, the toleration of uncomfortable emotions, and the inhibition of actions based on entitlement.

Whilst the Frustration-Discomfort sub-scales were significantly related to measures of emotional disturbance, it is also important and instructive to note the size of these relationships. The effect sizes for both anxiety and anger were strong to moderate. Thus, for the revised scale the relationship between anxiety and emotional intolerance showed a correlation of $r = .60$. And, even when controlling for negative affect, 17% of the variance was uniquely attributed to Frustration-Discomfort beliefs. Likewise, entitlement had a correlation of $r = .55$ with anger, and accounted for 23% of variance once negative affect had been controlled. However, the relationship between frustration

intolerance and depression was less pronounced. Comfort did correlate moderately strongly with depression (r = .44), comparable to the relationship with that of self-esteem (r = -.47). However, once negative affect was controlled the amount of variance explained by Frustration-Discomfort was substantially reduced from 24% to 6%. A similar reduction was found for the relationship between depression and self-esteem.

These results reflect a number of issues. In general, it highlights the considerable difficulties associated with the analysis of personality factors in depression (Coyne & Wiffen, 1995). First, the use of self-report inventories to measure depression is problematic. High scores on such measures in the absence of formal diagnosis may reflect dysphoria rather than clinical depression, and therefore increase the shared variance between negative affect and depression scores. Secondly, the number of patients in the study classified as suffering from depression, separate from either anger or anxiety, was small, pointing to the need for studies using adequate numbers of individuals with formal diagnosis. Thirdly, how far anxiety and depression are distinguishable has been the subject of considerable debate, with some investigators arguing that these concepts substantially overlap (Kendall & Watson, 1989). Given this, the fact that Frustration-Discomfort sub-scales were uniquely related to distinct aspects of emotional disturbance, and remained so after shared variance associated with self-esteem and negative affect were accounted for, underlines the importance of frustration intolerance beliefs in emotional disturbance. Indeed, smaller effect sizes are often reported between other types of belief and emotional disturbance. For instance, Kawamura et al. (2001) found that perfectionistic beliefs accounted for only 4% of additional variance in depression, and for 6% of the variance in anxiety, when controlling for negative affect. Finally, the relatively weaker association between Frustration-Discomfort scores with depression compared to anger may suggest the relatively greater importance of frustration intolerance beliefs in problems such as anger. However, problems such as anger and depression are clearly complex disorders and it would be expected that Frustration-Discomfort beliefs would be involved at many different levels.

## 11.4 EGO DISTURBANCE AND FRUSTRATION INTOLERANCE

The research supported a model separating self-worth and frustration intolerance beliefs. It suggested this distinction was meaningful rather than, for instance, an artefact due to the differences in item wording (DiGiuseppe, 1996). A possible criticism was the use of a self-esteem measure rather than one assessing self-acceptance. In REBT theory these are quite separate concepts, the first based on conditional self-rating and the second on unconditional acceptance. However, this was not considered to be a serious limitation since the Rosenberg scale was originally designed to reflect global self-evaluation which is a definitive feature of ego disturbance and self-acceptance. Consistent with this argument, that the Rosenberg Self-esteem Scale can function as a measure of ego disturbance, Chamberlain and Haaga (2001) obtained a 'surprisingly' high correlation ($r = -.56$) between a measure of REBT unconditional self-acceptance beliefs and the Rosenberg scale.

Nevertheless, it is possible that differences between a measure of REBT self-acceptance and the Rosenberg scale exist. This may be particularly so when comparing high self-esteem with high self-acceptance. For example, Chamberlain and Haaga (2001) found a significant positive association between a measure of narcissistic personality and high self-esteem on the Rosenberg scale ($r = .35$). In comparison, the present study found that the Frustration-Discomfort sub-scales had significant negative correlations with the Rosenberg scale ($r = -.36$). The significant negative correlation of the two 'discomfort' sub-scales with self-esteem was expected, given the overlap between these measures and negative affect. However, achievement and entitlement had only very weak correlations with overall self-esteem scores, and a non-significant correlation with the positive self-esteem sub-scale. This is contrary to several theoretical accounts linking elevated self-worth, and specifically those related to perfectionist and entitlement beliefs, with frustration intolerance. For example, Schema Focused Therapy proposes that entitlement derives from a sense of 'specialness' combined with unrealistic expectations instilled by

parental behaviour (Young & Flanagan, 1997), similar to psychodynamic theorists such as Kohut (1978).

There are a number of possible explanations for the lack of relationship between high self-esteem and entitlement. One is that the Frustration-Discomfort entitlement sub-scale inadequately represents entitlement beliefs. However, the correlation between Young's (1990) own entitlement sub-scale and self-esteem in the revised scale study was also negative and of the same magnitude ($r = -.17$) as that of Frustration-Discomfort entitlement ($r = -.20$). Another possibility is that the patient population was insufficiently representative of narcissism. However, a selected sub-group of patients scoring above the $10^{th}$ percentile on the Rosenberg scale, and therefore having relatively high self-esteem, did not score significantly higher on either achievement or entitlement compared to other patients. Comparisons using the student population also showed the same pattern, with no difference between entitlement scores between the top and bottom self-esteem quartiles.

It has also been suggested that narcissism is related to high unstable self-esteem rather than just high self-worth (Rhodewalt, Madrian, & Cheney, 1998). In REBT terms this distinction would be described as high conditional self-esteem in contrast to high unconditional self-acceptance, with the latter not expected to be associated with narcissism. It can be argued that in practice, low global self-esteem and low self-acceptance may be substantially the same, in that an individual with low self-esteem scores will also have poor self-acceptance. However, high self-esteem is not necessarily equivalent to high self-acceptance. This is because high Rosenberg scores may represent positive self-rating, perhaps based on successful goal achievement, rather than unconditional self-acceptance. Furthermore, only a proportion of individuals with high self-rating will be narcissistic. Even so, this would not account for Chamberlain and Haaga's (2001) finding of a positive correlation between the Rosenberg scale and narcissism, but a negative correlation between the Rosenberg scale and entitlement in the present study.

An alternative explanation is that entitlement beliefs have a weak relation to self-worth, and as this study would suggest, that frustration intolerance and self-worth are best considered as separate domains. Thus, although deservedness and disrespect have been proposed as being associated with defensive anger against loss of self-esteem (Baumeister, Smart, & Boden, 1996), the present results indicate these beliefs have almost no association with self-esteem. For example, the 'disrespect' item on the revised scale has a correlation of r = -.09 with the Rosenberg scale. This suggests that, whilst this belief refers to the self in relation to others, the underlying meaning concerns intolerance of 'not getting what one wants' rather than a threat to self-worth. In other words, it is a frustration intolerance belief operating in the ego disturbance domain, rather than a self-worth belief per se (Neenan & Dryden, 1999).

Therefore, it appears that frustration intolerance and entitlement are not synonymous with high self-esteem. Nevertheless, it could be argued that individuals with high scores on entitlement and achievement are better described as egocentric rather than narcissistic. Indeed, the imperative to get what one wants and avoid what one doesn't want, is essentially definitive of egocentricity rather than narcissistic high self-esteem. In this regard, Kohut (1978) suggests that two types of 'narcissism' may need to be distinguished, one related to frustration intolerance and the other to self-worth. Indeed, Ellis uses the term grandiosity in terms of demandingness, the belief that the 'universe should revolve around them', (Ellis, 1994a p 339), rather than simply referring to an inflated sense of self-worth. Horney (1950) also describes neurotic demands, or 'claims', in terms of entitlement. This includes entitlement to understanding and consideration, to an easy life, freedom from emotional distress, fairness, and the satisfaction of needs. However, while defining egocentricity in terms of the absolute priority of personal needs, she views this as a disturbance of the self. REBT, in distinguishing between self and frustration intolerance processes, clearly allows for grandiosity separate from issues of the self. Thus, Rorer (1989) proposed that grandiose beliefs represented demands that one self, other people, or the world must be different because the person wants it that way. He contrasts this with beliefs that are arbitrary definitions of self-worth.

It is true that existing measures of the self have been criticised as simplistic (Power, 1991), and the Rosenberg scale clearly does not adequately reflect the complexity of the ego disturbance concept. Indeed, Neenan & Dryden (1999) have argued that ego disturbance is simplistically defined by REBT theory and requires more detailed multidimensional analysis. Further research using multidimensional measures of self-acceptance is therefore required, in particular to explore the interaction between high self-esteem, anger, and frustration intolerance. Regarding the present results, there was evidence that the achievement and entitlement sub-scales were more strongly related to the negative, compared to the positive, self-esteem scale. Achievement was also associated with the self-esteem difference score, which in turn was a predictor of anger independent of global self-esteem. This suggested that the difference score represented criticism of personal performance separate from global self-rating. If so, this underlines the need to distinguish between different types of self-criticism, rather than assuming that all beliefs referring to the self are inevitably related to ego disturbance. Thus, self-critical demands ('I should have done better') are not necessarily linked to the global self-rating that is definitive of ego disturbance ('therefore I'm a failure'). Instead, they may be just associated with frustration intolerance derivative beliefs ('I can't stand failing'), particularly those related to entitlement and achievement. Furthermore, although frustration intolerance criticism may be couched in global terms ('I'm such an fool') this may represent an expression of frustration rather than worthlessness. This is consistent with Carver and Ganellen's (1983) research showing that global negative self-evaluation formed a separate factor to self-criticism, which they conceived as the discrepancy between the actual and ideal self. Related to this issue, REBT also distinguishes between demands on the self and other people (Ellis, 1977). Although both are assumed to involve global 'damnation', it could be argued that demands on other people might either refer to frustration intolerance or ego-disturbance beliefs. For instance, it is possible to be intolerant of others behaviour without considering that person 'damnable. The relationship between other-blame with frustration intolerance beliefs, particularly entitlement beliefs and anger is an area for further research.

## 11.5 THEORETICAL IMPLICATIONS

Considering the broader implications for cognitive-emotive assessment, it has been argued that research into belief content-specificity and vulnerability has been limited due to the use of global unidimensional measures (Power et al., 1994). The present study suggests that, in addition to developing theoretically derived content dimensions, different belief processes also need to taken into account. Thus, beliefs regarding achievement and social relationship goals can be divided into two further distinct categories regarding self-worth and frustration intolerance. The failure to distinguish these between these two categories of belief risks overlooking important relationships. Thus, regarding vulnerability to depression a general finding has been that core dysfunctional beliefs return to normal with recovery from depression. Safran et al. (1986) has argued that such core dysfunctional beliefs are defined by their associated with the self. Furthermore, that such cognitions can be distinguished by being the most resistant to change. However, it is possible that core beliefs related to the self are more open to fluctuating mood and are disputed more readily in therapy compared to frustration intolerant beliefs. As such, frustration intolerance beliefs may prove more resistant to change, and therefore serve as better markers for enduring psychological disturbance.

This research did not directly investigate the relationship of frustration intolerance with demandingness or the other irrational belief processes. However, compared to the preliminary scale the revised scale had stronger correlations with emotional disturbance and showed better discrimination between clinical and student groups. This may reflect the simplified structure of the scale both as regards general comprehension, and in that the preliminary scale compounded frustration intolerance and demand beliefs. It may also indicate that, as Bond and Dryden (2000) have suggested, irrational beliefs are best phrased as secondary beliefs without reference to demands. Although REBT theory has proposed a reciprocal or hierarchical association between demands and frustration intolerance, for instance a 'need' implies the inability to tolerate its deprivation (Wessler

& Wessler, 1980; DiGiuseppe, 1996), the empirical evidence regarding this arrangement is lacking. Indeed, Ellis (2003) has recently argued that demands and awfulising are distinct categories and that either type of belief may lead to the other or be most prominent. However, the prominence of particular types of irrational belief may depend on their belief content.

The evidence that achievement frustration was related to reduced frequency of procrastination raises questions as to whether irrational beliefs are always counterproductive. REBT hypothesises that people are sometimes productive in spite of irrational beliefs, although psychological problems are highly correlated with such beliefs (Ellis, 1989). Clearly, a model whereby an irrational belief leads to well-defined consequences is oversimplistic and, in real life, a range of conflicting outcomes may be involved. Thus, perfectionistic beliefs may motivate work but at the same time reduce involvement in other pursuits. The important issue is whether an individual has the flexibility to chose between goals, rather than the narrow success of specific goals alone. In some circumstances rigid attitudes towards goals may be productive, however in the longer term, when changing conditions require adaptation, the counterproductive nature of irrational belief may become apparent. This highlights the importance, emphasised by Ellis (1996b), of using a number of criteria to define irrational beliefs, including flexibility as well as goal outcome.

There is also a question as to what are the most appropriate dependent measures when evaluating frustration intolerance. Research investigating cognition and emotional disturbance has tended to focus on psychiatric categories, predominately mood disorder, overshadowing problems of self-control. However, frustration intolerance beliefs are associated with avoidance of emotional distress and, for many problems, distress may be experienced by other people rather than the individual themselves. Difficulties in self-control may also not be dramatic, may take place over longer periods, and be less likely to be identified as personal problems. For instance, comfort beliefs may eventually lead to lowered achievement and life satisfaction but no acute emotional or behavioural

disturbance. Furthermore, for many self-control behaviours simple measures of frequency may not reflect underlying core frustration intolerance beliefs. Thus, while many students were found to procrastinate substantially fewer had problems resulting from this. It has been argued that the important feature of dysfunctional behaviour based on frustration intolerance is that it continues in spite of negative consequences that the person wishes to avoid. From this, measures of self-defined problem behaviours may be more appropriate.

## 11.6 CLINICAL IMPLICATIONS

There has been a lack of empirical evidence to determine which irrational beliefs are best targeted for dispute and for what problems (Deffenbacher et al., 1986; Kendall et al., 1995). As Murran (1991) notes, this requires an assessment instrument sensitive enough to identify specific irrational schema. Although REBT clinical assessment is based on the analysis of specific situations, these are often complex, with the risk that therapists may focus on irrelevant cognitions (Neenan & Dryden, 1999). A multidimensional model of frustration intolerance points to the benefit of examining different Frustration-Discomfort dimensions separately to fully assess presenting problems. Most generally, these findings highlight the importance of clearly separating frustration intolerance beliefs from self-worth in cognitive-behavioural interventions. That this distinction is sometimes confused can be illustrated by the assertion, made in relation to substance abuse and anger, that core beliefs relating to 'unlovabilty' underlie low frustration tolerance (Beck, Wright, Newman, & Liese, 1983. p247).

More specifically, DiGiuseppe, Tafrate, and Eckhardt (1994) have noted that treatments for anger lack the empirical evidence to determine which specific types of belief are best targeted for intervention. Some approaches have highlighted low or fragile self-worth (Beck, 1999). Others suggest that unstable high self-esteem is more important and that treatment should aim to reduce excessive positive self-rating (Twenge & Campbell, 2003). However, present results indicate that low self-esteem has only a weak

relationship with the experience of anger, and there was no relationship between anger and high self-esteem. Indeed, for both the preliminary and revised scales, when entitlement was partialled out self-esteem was no longer significant correlated with anger. This is consistent with other recent studies that have found no significant relationship between self-esteem and anger (e.g. Bushman & Baumeister, 1998; Twenge & Campbell, 2003).

In contrast, frustration intolerance and particularly entitlement had a robust association with anger. Of course, the role of entitlement in anger has long been recognised, however this has often been assumed to derive from superior self-worth (e.g. Raskin, Novacek, & Hogan, 1991). The present research, underlining the role of frustration intolerance and entitlement in anger, is consist with DiGiuseppe and Froh (2002) results that showed high self-efficacy being associated with lower levels of anger, whereas demands that things or people should be different were predictive of greater levels of anger. Likewise, Lopez and Thurman (1988) using the Irrational Beliefs Questionnaire found that the belief that most distinguished high from low anger was 'things don't go the way they should'. This present research suggests intolerance related to entitlement and achievement should be a primary focus in treatments for anger, rather than issues of self-worth. Yapp & Dryden (1995) have described how successfully disputing one category of belief may result in the emergence of concurrent beliefs triggering other emotions. The importance of disputing coexisting categories may also apply to specific dimensions of frustration intolerance. For example, disputing beliefs regarding comfort may improve depressed mood but allow underlying beliefs regarding deprivation and entitlement to become operational, leading to anger.

## 11.7 LIMITATIONS AND FUTURE DIRECTIONS

As a correlational study, the most important limitation is that definite conclusions regarding casual relationships between variables cannot be made. In this regard, it is of interest how the present cognitive model might be compared with the experimental results of Baumeister and colleagues (Baumeister et al., 1998; Muraven & Baumeister, 2000). From their research, they propose that self-control is a limited resource temporarily depleted with use. Thus, when individuals were asked to undertake tasks involving self-regulation subsequent attempts to resist temptation were more likely to fail. Although not incompatible with cognitive models, it does lead to different predictions open to experimental investigation. In particular, they note that if self-control depended on a cognitive 'schema' self-control might be expected to activate such schema and increase subsequent self-control, contrary to their findings. However, this assumes that such schema only involve functional beliefs. Yet, the REBT model describes both rational and irrational schema, either of which may be independently activated by frustrating situations. Therefore, REBT theory would predict that priming irrational beliefs prior to a series of self-control tasks should reduce resistance to temptation, whereas priming rational schema should increase this ability.

Although Baumeister et al. (1998) liken self-control to a muscle or willpower they admit the nature of the limited resource is unclear. Therefore, it is of interest how these results might be integrated into the REBT model. Certainly, frustration intolerant beliefs are often described in quantitative terms, for example that tasks are *'too difficult'* implying that beyond a certain point the person becomes intolerant of further effort. It seems reasonable to assume that intolerance beliefs are triggered in relation to both the level and type of discomfort. For instance, everyday language commonly refers to 'only able to take so much', and often outburst of anger or withdrawal are said to follow the accumulation of events. On the other hand, frustration intolerance schema once activated may be applied irrespective of the importance of the situation. Thus, individuals with procrastination problems report delaying on both trivial as well as important tasks. This

also raises the question as to what is meant by the *strength* of irrational beliefs. Further research might investigate whether strong endorsement of Frustration-Discomfort items is associated with the intolerance of an increased range of situations, or the intolerance of smaller amount of discomfort. Baumeister's research also suggests that self-control is limited and should therefore be conserved, at least in the short term. In contrast, REBT treatment methods actively encourage exposure to frustrating situation in order to weaken intolerance beliefs. It would be of interest to explore whether individuals who have exerted self-control, such as stopping smoking, or coped with painful trauma, have decreased Frustration-Discomfort scores. Certainly, evidence using the Rosenbaum self-control scale suggests that such beliefs do play a central role in a range of health behaviours (Rosenbaum, 1990). A further unanswered question is the role of *rational* beliefs in the process of self-control, which was not examined by the present research.

The validity of this research was increased by the use of both clinical and student populations, given that many previous studies of irrational beliefs have used non-clinical populations. Nevertheless, the two clinical samples were relatively small and the types of problem largely undifferentiated in terms of formal diagnosis. It would be useful to compare specific groups identified as having specific self-control problems. Such groups might be more appropriate for investigating the validity of frustration intolerance than broader psychiatric categories. In this regard, the evidence that individuals with both anger and depression had higher levels of comfort and emotional discomfort beliefs was intriguing. However, conclusions regarding different types of depression can only be tentative due to the small numbers in the depressed group and the lack of formal diagnosis. Similarly, the lack of association between belief variables and therapy outcome was disappointing, but possibly not surprising given the complex nature of therapy change and the simple measures of improvement. It was encouraging that differences in therapy engagement were found, and these were consistent with expectations. These results also underlined the importance of a multidimensional assessment of frustration intolerance. For instance, it has been argued that individuals with poor frustration tolerance tend to seek 'interminable' help from others (Dryden &

Yankura, 1993). However, whilst comfort beliefs were consistent with increased therapy sessions entitlement beliefs and emotional discomfort were related to dropout. In this regard, it would be interesting to examine whether specifically targeting particular frustration intolerance beliefs would improve treatment effectiveness.

Finally, the question as to whether the Frustration-Discomfort Scale represents a trait or state dimension was not addressed. Whilst it was demonstrated that specific irrational beliefs were uniquely related to particular psychological problems, the cross-sectional design leaves it unclear as to whether these beliefs change with effective treatment. Due to limitations of time, it was not possible to assess treatment outcome following therapy and this is a goal of future research. A longitudinal study would also help to assess whether, in comparison to self-worth, frustration intolerance beliefs are more enduring or increase vulnerability to relapse. At least for some individuals, these beliefs might operate as enduring dispositions, consistent with REBT theory regarding the biological basis for irrational beliefs. However, similar to self-worth models frustration intolerance may be conceptualised as having both state and trait properties (Crocker & Wolfe, 2001). That is, enduring schema would determine the stable average levels of frustration intolerance, but responses to specific situations would fluctuate around this level. Specific responses might often reflect the core schema that determine more generalised disturbance (Dryden, 2003). Certainly, the Frustration-Discomfort sub-scales are substantially intercorrelated, suggesting that individuals prone to one group of frustration intolerance beliefs are also likely to be vulnerable to others, and very high Frustration-Discomfort scores may well reflect pervasive beliefs representing core schema. Indeed, DiGuiseppe has suggested that frustration intolerance is an important dimension of personality disorder, particularly regards persistence of disturbance.

## 11.8 CONCLUDING COMMENTS

Models of psychological disturbance have tended to emphasise the self in the formation of dysfunctional beliefs. Indeed historically, defences against threats to the self are at the

heart of psychoanalytic explanations of disturbance. A unique feature of REBT theory is the distinction made between self-worth and frustration intolerance beliefs, and the central importance of frustration intolerance in psychological problems. This research has demonstrated the reliability and validity of a multidimensional measure of frustration intolerance beliefs, and the usefulness of examining these separate dimensions. In doing so it has provided evidence for the independent contribution of these beliefs to disturbance, and supported the validity of this fundamental REBT construct.

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# APPENDICES

# APPENDIX 1

## FRUSTRATION-DISCOMFORT SCALE (REVISED SCALE)

# FRUSTRATION-DISCOMFORT SCALE (R)

**NAME** **DATE**

Listed below are a number of common thoughts and beliefs that people may have when they are distressed or frustrated. Please read each statement and decide how well this usually describes your own beliefs. Circle the number that best indicates the strength of this belief.

**RATING SCALE:** absent = 1 mild = 2 moderate = 3 strong = 4 very strong = 5

1 I can't tolerate painful memories

1 2 3 4 5

2 I can't stand the stress of too many demands on my time

1 2 3 4 5

3 I can't stand having to wait for things I would like now

1 2 3 4 5

4 I can't stand having to wait when I want to get on with tasks

1 2 3 4 5

5 I absolutely must be free of disturbing feelings as quickly as possible; I can't bear if they continue

1 2 3 4 5

6 I can't stand doing tasks that I'm not interested in

1 2 3 4 5

7 I can't stand it if people act against my wishes

1 2 3 4 5

8 I can't stand life being so unfair when I have not deserved it

1 2 3 4 5

9 I can't stand the frustration of being disorganised

1 2 3 4 5

**RATING SCALE:** absent = 1 mild = 2 moderate = 3 strong = 4 very strong = 5

10 I can't bear to feel that I am losing my mind

1 2 3 4 5

11 I can't tolerate being overlooked

1 2 3 4 5

12 I can't stand being prevented from achieving my full potential

1 2 3 4 5

13 I can't bear to have certain thoughts

1 2 3 4 5

14 I need the easiest way around a problem; I can't stand making a hard time of it

1 2 3 4 5

15 I can't bear it if other people stand in the way of what I want

1 2 3 4 5

16 I can't bear to have been treated unjustly

1 2 3 4 5

17 I can't bear the frustration of not achieving my goals

1 2 3 4 5

18 I can't stand situations where I might feel upset

1 2 3 4 5

19 I can't stand doing tasks that seem too difficult

1 2 3 4 5

20 I can't tolerate lowering my standards even when it would be useful to do so

1 2 3 4 5

21 I can't bear to experience extra problems

1 2 3 4 5

**RATING SCALE:** absent = 1 mild = 2 moderate = 3 strong = 4 very strong = 5

22 I can't stand doing tasks when I'm not in the mood

1 2 3 4 5

23 I can't stand being left in the dark with no explanations

1 2 3 4 5

24 I can't bear to move on from work I'm not fully satisfied with

1 2 3 4 5

25 I can't bear disturbing feelings

1 2 3 4 5

26 I can't stand having to push myself at tasks

1 2 3 4 5

27 I can't tolerate being taken for granted

1 2 3 4 5

28 I can't stand doing a job if I'm unable to do it well

1 2 3 4 5

29 I can't stand the hassle of having to do things right now

1 2 3 4 5

30 I can't tolerate being treated with a lack of consideration

1 2 3 4 5

31 I can't bear to make decisions about which I'm uncertain.

1 2 3 4 5

32 I can't stand the slightest hassle in my daily life

1 2 3 4 5

33 I can't stand having to give into other people's demands

1 2 3 4 5

**RATING SCALE:** absent = 1 mild = 2 moderate = 3 strong = 4 very strong = 5

34 I can't get on with my life, or be happy, if things don't change

1 2 3 4 5

35 I can't bear to feel that I'm not on top of my work

1 2 3 4 5

36 I can't stand giving up immediate pleasures for the sake of a distant goal

1 2 3 4 5

37 I can't tolerate being treated with disrespect

1 2 3 4 5

38 I can't tolerate any lapse in my self-discipline

1 2 3 4 5

39I can't bear sad or morbid thoughts

1 2 3 4 5

40 I can't stand doing things that involve a lot of hassle

1 2 3 4 5

41 I can't stand having to change when others are at fault

1 2 3 4 5

42 I can't bear to 'waste' time

1 2 3 4 5

43 I can't stand to lose control of my feelings

1 2 3 4 5

44 I can't stand having to persist at unpleasant tasks

1 2 3 4 5

45 I can't tolerate criticism especially when I know I'm right

1 2 3 4 5

**RATING SCALE:** absent = 1 mild = 2 moderate = 3 strong = 4 very strong = 5

46 I can't bear being deprived now of things I lacked in the past

1 2 3 4 5

47 I can't bear having my familiar routines disrupted

1 2 3 4 5

48 I can't tolerate other people's bad or stupid behaviour

1 2 3 4 5

49 I can't stand life being so difficult for me

1 2 3 4 5

# APPENDIX 2

## FRUSTRATION-DISCOMFORT SCALE (PRELIMINARY SCALE)

# FRUSTRATION-DISCOMFORT SCALE

**NAME** **DATE**

**This questionnaire lists a number of attitudes about situations that people often hold. You are asked two questions about each situation.**

**Firstly, how strongly you believe that you *couldn't stand or bear* the situation.**

**Secondly, how strongly you would put yourself down or think badly about yourself as a person in this situation. In other words, how much it would *lower your self-esteem*.**

**If a particular attitude does not apply to you, or you have no such thoughts about it, please circle 0 for 'absent'.**

**Please circle the number that indicates how strong your beliefs are on these two questions. Please answer every question.**

**Example (A)**

| | | absent | mild | moderate | strong | very strong |
|---|---|---|---|---|---|---|
| **I absolutely must not be late.** | | | | | | |
| **Because** | **I can't stand the frustration of being late.** | 0 | 1 | 2 | 3 | 4 |
| | **It would totally lower my self-esteem.** | 0 | 1 | 2 | 3 | 4 |

**In this example, the person has a very strong belief that he *could not tolerate* the frustration of being late. However, although frustrated, he *would not put himself down* for being late.**

**Example (B)**

| | | absent | mild | moderate | strong | very strong |
|---|---|---|---|---|---|---|
| **I absolutely must not feel nervous.** | | | | | | |
| **Because** | **I can't stand feeling nervous.** | 0 | 1 | 2 | 3 | 4 |
| | **It would totally lower my self-esteem.** | 0 | 1 | 2 | 3 | 4 |

**In this example, the person believes she *could put up with* feeling nervous. However, she would still *think badly about herself* for feeling like that.**

| | | absent | mild | moderate | strong | very strong |
|---|---|---|---|---|---|---|
| 1. I absolutely must not risk upsetting other people. | | | | | | |
| Because | I can't bear to upset others. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 2. I absolutely must not risk being rejected. | | | | | | |
| Because | I can't bear to take such risks. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 3. I absolutely must not have boring tasks to do. | | | | | | |
| Because | I can't stand being bored. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 4. I absolutely must not lose strict control of my diet. | | | | | | |
| Because | I can't stand the slightest lapse. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 5. I absolutely must not experience painful memories. | | | | | | |
| Because | I can't tolerate such pain. | 0 | 1 | 2 | 3 | 4 |
| | They totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 6. I absolutely must not be at the mercy of events. | | | | | | |
| Because | I can't stand being powerless to act. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 7. I absolutely must not make sacrifices for the sake of the future. | | | | | | |
| Because | I can't stand losing out today. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 8. I absolutely must not go too far from where I feel safe. | | | | | | |
| Because | I can't stand feeling insecure. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 9. I absolutely must be certain about decisions. | | | | | | |
| Because | I can't stand having doubts. | 0 | 1 | 2 | 3 | 4 |
| | It totally lowers my self-esteem to have doubts. | 0 | 1 | 2 | 3 | 4 |
| 10. I absolutely shouldn't have been treated so unfairly in the past. | | | | | | |
| Because | I can't bear such injustice. | 0 | 1 | 2 | 3 | 4 |
| | It continues to totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 11. I absolutely must not waste time. | | | | | | |
| Because | I can't bear to waste time. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |

| | absent | mild | moderate | strong | very strong |
|---|---|---|---|---|---|
| 12. I absolutely must not leave work unfinished. | | | | | |
| Because I can't bear to leave work unfinished. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 13. I absolutely must not be involved in arguments and conflicts. | | | | | |
| Because I can't stand such disagreements. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 14. My situation absolutely must not remain as it is. | | | | | |
| Because I can't stand for it to continue. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 15. I absolutely must not suffer loss. | | | | | |
| Because It would be unbearable. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 16. I absolutely must not be overlooked. | | | | | |
| Because I couldn't stand such unfairness. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 17. Other people absolutely must not restrict me. | | | | | |
| Because I can't stand it if I am restricted. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 18. I absolutely shouldn't have to do things right now. | | | | | |
| Because I can't stand the hassle. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 19. I absolutely must not be deprived of the support I need. | | | | | |
| Because I can't go on without support. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 20. I absolutely don't deserve what has happened to me. | | | | | |
| Because I can't stand life being so unfair. | 0 | 1 | 2 | 3 | 4 |
| It continues to totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 21. I absolutely must have the buzz I need. | | | | | |
| Because I can't stand being deprived of this. | 0 | 1 | 2 | 3 | 4 |
| Not having this would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 22. I absolutely must be free of hassles. | | | | | |
| Because I can't stand even the slightest hassle. | 0 | 1 | 2 | 3 | 4 |
| They totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |

| | absent | mild | moderate | strong | very strong |
|---|---|---|---|---|---|
| 23. I absolutely must not be opposed when I know I'm right. | | | | | |
| Because I can't stand that happening. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 24. I absolutely must not be kept waiting. | | | | | |
| Because I can't tolerate waiting. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 25. I absolutely must not experience mental difficulties. | | | | | |
| Because I can't stand to feel I'm losing my mind. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 26. I absolutely must have an explanation. | | | | | |
| Because I can't stand being in the dark. | 0 | 1 | 2 | 3 | 4 |
| It totally lowers my self-esteem not having one. | 0 | 1 | 2 | 3 | 4 |
| 27. I absolutely must not experience extra problems. | | | | | |
| Because I couldn't stand any more problems. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 28. I absolutely shouldn't have to work so hard at relationships. | | | | | |
| Because I can't stand it being so difficult. | 0 | 1 | 2 | 3 | 4 |
| It totally lowers my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 29. I absolutely must not experience any signs of slipping back. | | | | | |
| Because I couldn't bear to have such feelings. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 30. I absolutely must not be taken for granted. | | | | | |
| Because I can't stand being unappreciated. | 0 | 1 | 2 | 3 | 4 |
| It totally lowers my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 31. My parents absolutely shouldn't have neglected my emotional needs. | | | | | |
| Because It is an unbearable gap. | 0 | 1 | 2 | 3 | 4 |
| It continues to totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 32. I absolutely must not do things that could be upsetting. | | | | | |
| Because I can't stand being upset. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 33. I absolutely must not be alone. | | | | | |
| Because I can't stand being by myself. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |

| | | absent | mild | moderate | strong | very strong |
|---|---|---|---|---|---|---|
| 34. Those close to me absolutely must not be so difficult. | | | | | | |
| Because | I can't stand it when they are difficult. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 35. Those close to me absolutely must not act against my wishes. | | | | | | |
| Because | I can't stand it if they do. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 36. I absolutely must remain comfortable for as long as possible. | | | | | | |
| Because | I can't stand having to shift. | 0 | 1 | 2 | 3 | 4 |
| | Loss of comfort would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 37. I absolutely must not do things slowly. | | | | | | |
| Because | I can't stand taking my time. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 38. I absolutely must not relax my self-discipline. | | | | | | |
| Because | I can't bear the slightest lapse. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 39. I absolutely must not experience disturbing feelings. | | | | | | |
| Because | I can't bear such feelings. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 40. Other people absolutely must understand me. | | | | | | |
| Because | I can't bear it otherwise. | 0 | 1 | 2 | 3 | 4 |
| | It totally lowers my self-esteem not having this. | 0 | 1 | 2 | 3 | 4 |
| 41. I absolutely must not lose control over how I feel. | | | | | | |
| Because | I couldn't bear that to happen. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 42. I absolutely must be confident of success before I start. | | | | | | |
| Because | I can't stand uncertainty. | 0 | 1 | 2 | 3 | 4 |
| | Otherwise, it would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 43. I absolutely must not be disturbed by noise. | | | | | | |
| Because | I can't stand such disturbance. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 44. I absolutely must not be the centre of attention. | | | | | | |
| Because | I can't bear to feel self-conscious. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |

| | | absent | mild | moderate | strong | very strong |
|---|---|---|---|---|---|---|
| 45. I absolutely must not suppress my feelings . | | | | | | |
| Because | I can't stand bottling my feelings up. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 46. I absolutely must have an easier way around problems. | | | | | | |
| Because | I can't stand facing problems. | 0 | 1 | 2 | 3 | 4 |
| | It totally lowers my self-esteem to do so. | 0 | 1 | 2 | 3 | 4 |
| 47. I absolutely must not be disorganised. | | | | | | |
| Because | I can't bear disorganisation. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 48. I absolutely need excitement in my life. | | | | | | |
| Because | I couldn't stand a lack of excitement. | 0 | 1 | 2 | 3 | 4 |
| | Otherwise, it would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 49. I absolutely must not have too many demands on my time. | | | | | | |
| Because | I can't stand the stress involved. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 50. I absolutely must not have interference from other people. | | | | | | |
| Because | I can't bear such hassles. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 51. I absolutely must not change myself. | | | | | | |
| Because | I can't stand the discomfort of change. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 52. I absolutely must not be deprived now of the affection I needed in the past. | | | | | | |
| Because | I can't bear to be deprived further. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 53. I absolutely must not be let down by other people. | | | | | | |
| Because | I can't stand being let down. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 54. I absolutely shouldn't have to make so much effort. | | | | | | |
| Because | I can't stand having to push myself. | 0 | 1 | 2 | 3 | 4 |
| | It totally lowers my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 55. I absolutely must not be blocked in getting things done. | | | | | | |
| Because | I can't stand being obstructed. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |

| | | absent | mild | moderate | strong | very strong |
|---|---|---|---|---|---|---|
| 56. I absolutely must not have the personal flaws that I do. | | | | | | |
| Because | I can't tolerate such shortcomings. | 0 | 1 | 2 | 3 | 4 |
| | They totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 57. I absolutely must not have certain thoughts. | | | | | | |
| Because | I can't bear such thoughts. | 0 | 1 | 2 | 3 | 4 |
| | They totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 58. I absolutely shouldn't have to persist at unpleasant tasks. | | | | | | |
| Because | I can't stand having to do so. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 59. I absolutely must not feel below par (e.g. due to lack of sleep or illness). | | | | | | |
| Because | I can't stand feeling below par. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 60. Those I care for absolutely shouldn't have been treated so badly. | | | | | | |
| Because | I can't bear that it happened. | 0 | 1 | 2 | 3 | 4 |
| | It continues to totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 61. I absolutely shouldn't have to delay getting what I want. | | | | | | |
| Because | I can't stand such delays. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 62. I absolutely must not give into other people's demands. | | | | | | |
| Because | I can't stand having to do so. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 63. I absolutely must not have my familiar routines disrupted. | | | | | | |
| Because | I can't bear the disturbance. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 64. I absolutely must be free of distressing feelings as quickly as I can. | | | | | | |
| Because | I can't bear for them to continue. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem if they continued. | 0 | 1 | 2 | 3 | 4 |
| 65. If a job is worth doing, I absolutely must not fall short. | | | | | | |
| Because | I cannot accept lower standards. | 0 | 1 | 2 | 3 | 4 |
| | It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 66. Tasks that I attempt absolutely must not be too difficult. | | | | | | |
| Because | Otherwise, I can't stand doing them. | 0 | 1 | 2 | 3 | 4 |
| | They would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |

| | absent | mild | moderate | strong | very strong |
|---|---|---|---|---|---|
| 67. Close relationships absolutely must not end. | | | | | |
| Because I couldn't bear to start again. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 68. I absolutely must be in the mood before I tackle something. | | | | | |
| Because Otherwise, I couldn't stand doing it. | 0 | 1 | 2 | 3 | 4 |
| Otherwise, it would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 69. I absolutely must not feel trapped. | | | | | |
| Because I can't bear to feel trapped. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 70. I absolutely shouldn't have to change when others are at fault. | | | | | |
| Because I can't tolerate doing so. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 71. I absolutely must not have morbid thoughts. | | | | | |
| Because I can't bear such thoughts. | 0 | 1 | 2 | 3 | 4 |
| They totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 72. I absolutely need to indulge myself. | | | | | |
| Because I can't stand being deprived of enjoyments. | 0 | 1 | 2 | 3 | 4 |
| Without this my self-esteem would be totally lowered. | 0 | 1 | 2 | 3 | 4 |
| 73. I absolutely must not be treated with disrespect. | | | | | |
| Because I can't tolerate disrespect. | 0 | 1 | 2 | 3 | 4 |
| It would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |
| 74. I absolutely must be interested in a task that I attempt. | | | | | |
| Because Otherwise, I can't stand doing it. | 0 | 1 | 2 | 3 | 4 |
| Otherwise, it would totally lower my self-esteem. | 0 | 1 | 2 | 3 | 4 |

# APPENDIX 3

# PILOT QUESTIONNAIRE

# PILOT QUESTIONNAIRE

**NAME :** **DATE :**

**This questionnaire lists a number attitudes that people may hold.**

**Please read each statement and circle the number that indicates how strongly you agree or disagree. Base your answer on your gut feeling rather than what you think may be true.**

**Each statement has two questions :**

**Firstly, it asks how much you can tolerate or bear the situation described. Secondly, it asks how much the situation would lower your self esteem.**

**For example: (A)**

| | | strongly disagree | | | | strongly agree |
|---|---|---|---|---|---|---|
| | **I absolutely must not be late.** | | | | | |
| **Because:** | **I couldn't stand it I was.** | **1** | **2** | **3** | **4** | **5** |
| | **It would totally lower my self esteem.** | **1** | **2** | **3** | **4** | **5** |

**In this example the person has strongly agreed that he would be unable to stand the frustration of being late, but that this would not make them feel bad about themselves.**

**(B)**

| | | | | | | |
|---|---|---|---|---|---|---|
| | **I absolutely must not look nervous.** | | | | | |
| **Because:** | **I couldn't stand it.** | **1** | **2** | **3** | **4** | **5** |
| | **It would totally lower my self esteem.** | **1** | **2** | **3** | **4** | **5** |

**In this example the person agrees that she could put up with looking nervous but would put herself down for doing so.**

| | | strongly disagree | | | | strongly agree |
|---|---|---|---|---|---|---|
| 1. My parents absolutely shouldn't have been so unaffectionate. | | | | | | |
| Because: | I can't bear that they were. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 2. I absolutely must not risk rejection. | | | | | | |
| Because: | I couldn't stand it if I was. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 3. I absolutely must not be bored. | | | | | | |
| Because: | I can't stand it. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 4. I absolutely must not fall short of other's expectations. | | | | | | |
| Because: | I couldn't bear to do that. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 5. I absolutely must not experience painful feelings. | | | | | | |
| Because: | I can't tolerate them. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 6. I absolutely must not be prevented from achieving my best. | | | | | | |
| Because: | I can't stand to be frustrated in this. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 7. I absolutely shouldn't have to make sacrifices for the future. | | | | | | |
| Because: | I can't stand losing out today. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 8. I absolutely must have a 'quick fix'when I feel unpleasant. | | | | | | |
| Because: | I can't stand continuing to feel bad. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 9. I absolutely must not be uncertain about decisions. | | | | | | |
| Because: | I can't stand having doubts. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 10. I absolutely shouldn't have been treated so unfairly in the past. | | | | | | |
| Because: | I can't bear that I was. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 11. I absolutely shouldn't have wasted so much time in the past. | | | | | | |
| Because: | I can't bear to think I did. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |

| | | strongly disagree | | | | strongly agree |
|---|---|---|---|---|---|---|
| 12. I absolutely must not waste opportunities. | | | | | | |
| Because: | I can't bear to do so. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 13. I absolutely must not be involved in arguments and conflicts. | | | | | | |
| Because: | I can't stand such disagreement. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 14. I absolutely must not be at the mercy of events. | | | | | | |
| Because: | I can't stand being powerless to act. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 15. I absolutely must not suffer loss. | | | | | | |
| Because: | It would be unbearable. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 16. I absolutely must not accept the past . | | | | | | |
| Because: | I couldn't bear to do that. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 17. I absolutely shouldn't have been so unappreciated. | | | | | | |
| Because: | I can't stand to been treated so unfairly. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 18. I absolutely shouldn't have to discipline myself. | | | | | | |
| Because: | I can't stand giving myself a hard time. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 19. I absolutely shouldn't have been deprived of support. | | | | | | |
| Because: | I can't bear that I was. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 20. Life shouldn't have been so difficult. | | | | | | |
| Because: | I can't stand it being so unfair. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 21. I absolutely must not have worries. | | | | | | |
| Because: | I can't stand being disturbed by such thoughts. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 22. I absolutely must not be uncertain about physical symptoms. | | | | | | |
| Because: | I can't stand being unsure. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |

| | | strongly disagree | | | | strongly agree |
|---|---|---|---|---|---|---|
| 34. People close to me absolutely shouldn't have been so difficult. | | | | | | |
| Because: | I couldn't stand it. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 35. My parents absolutely shouldn't have been so disapproving. | | | | | | |
| Because: | I can't bear that they were. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 36. I absolutely must not risk making important mistakes. | | | | | | |
| Because: | I couldn't tolerate that. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 37. I absolutely shouldn't have to do things slowly. | | | | | | |
| Because: | I can't tolerate the frustration. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 38. I absolutely must not lose control of my weight. | | | | | | |
| Because: | I couldn't bear doing that. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 39. I absolutely must not experience disturbing symptoms or emotions. | | | | | | |
| Because: | I can't bear such feelings. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 40. I absolutely must not be misunderstood. | | | | | | |
| Because: | I can't bear when that occurs. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 41. I absolutely shouldn't have the personal flaws that I do. | | | | | | |
| Because: | I can't stand them. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 42. My parents absolutely shouldn't have been so belittling. | | | | | | |
| Because: | I can't stand it. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 43. I absolutely must not be disturbed by noise. | | | | | | |
| Because: | I can't stand it. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 44. Those close to me absolutely must not be inattentive. | | | | | | |
| Because: | I can't bear to be ignored. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |

| | | strongly disagree | | | | strongly agree |
|---|---|---|---|---|---|---|
| 23.I absolutely must not be opposed when I know I'm right. | | | | | | |
| Because: | I can't stand that happening. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 24. I absolutely must not be taken advantage of. | | | | | | |
| Because: | I can't tolerate it. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 25. Absolutely must not come into contact with things that are unclean. | | | | | | |
| Because: | I can't stand it. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 26. The past absolutely must not be left unexplained. | | | | | | |
| Because: | I can't stand being in the dark. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 27. I absolutely shouldn't have to face problems. | | | | | | |
| Because: | I can't stand having to do so. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 28. I absolutely must not feel uncared for. | | | | | | |
| Because: | I couldn't bear to feel that way. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 29. I absolutely must not slip back to how I felt in the past. | | | | | | |
| Because: | I couldn't bear that to happen. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 30. I absolutely shouldn't have been taken for granted. | | | | | | |
| Because: | I can't stand that I was | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 31. My parents absolutely shouldn't have neglected my emotional needs. | | | | | | |
| Because: | It is an unbearable gap. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 32. I absolutely must not have to do things I dislike. | | | | | | |
| Because: | I can't bear the hassle. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 33. I absolutely must not risk upsetting others. | | | | | | |
| Because: | I couldn't stand it. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |

| | | strongly disagree | | | | strongly agree |
|---|---|---|---|---|---|---|
| 45. My parents expect that I absolutely must not fail. | | | | | | |
| Because: | I can't stand failing to meet such demands. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 46. I absolutely must not have a hard time getting what I want. | | | | | | |
| Because: | I can't stand such difficulties. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 47. I absolutely shouldn't have been so disorganized. | | | | | | |
| Because: | I can't bear that I was. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 48. I absolutely must not have too much routine. | | | | | | |
| Because: | I can't stand it. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 49. There absolutely must not be too many demands on my time. | | | | | | |
| Because: | I can't stand the frustrations involved. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 50. My parents absolutely shouldn't have been so restrictive. | | | | | | |
| Because: | I can't bear that they were. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 51. I must not change how I am. | | | | | | |
| Because: | I couldn't bear to be 'phoney'. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 52 I absolutely must not continue to be deprived of the affection I needed. | | | | | | |
| Because: | I couldn't bear it. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 53. I absolutely shouldn't have been let down by others. | | | | | | |
| Because: | I can't stand it. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 54. I absolutely shouldn't have to push myself. | | | | | | |
| Because: | I can't stand too much effort. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 55. I absolutely must not be blocked in getting things done. | | | | | | |
| Because: | I can't stand such hassles. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |

| | | strongly disagree | | | | strongly agree |
|---|---|---|---|---|---|---|
| 56. Other people absolutely must not cause me extra problems. | | | | | | |
| Because: | I can't bear it they do. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem | 1 | 2 | 3 | 4 | 5 |
| 57. People close to me must not act against my wishes. | | | | | | |
| Because: | I can't stand that they do. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 58. I absolutely shouldn't have to persist at tasks. | | | | | | |
| Because: | I can't stand having to do so. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 59. I absolutely must not feel below par (e.g. due to lack of sleep or illness). | | | | | | |
| Because: | I can't stand feeling like that. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 60. Those I care for absolutely shouldn't have been treated so badly. | | | | | | |
| Because: | I can't bear that it happened. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 61. I absolutely must not delay getting what I want. | | | | | | |
| Because: | I can't stand waiting. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 62. I absolutely shouldn't have to conform to the demands of others. | | | | | | |
| Because: | I can't stand having to do so. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 63. I absolutely must not experience too much change. | | | | | | |
| Because: | I can't tolerate it | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 64. I absolutely shouldn't have failed to reach my potential. | | | | | | |
| Because: | I can't stand having been frustrated in this. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 65. If a jobs worth doing I absolutely must not fall short. | | | | | | |
| Because: | I can't stand second best. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 66. I absolutely shouldn't have to tackle tasks that are too difficult. | | | | | | |
| Because: | I can't stand the hassle. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |

| | | strongly disagree | | | | strongly agree |
|---|---|---|---|---|---|---|
| 67. People close to me absolutely shouldn't have left me. | | | | | | |
| Because: | I can't bear that they did. | 1 | 2 | 3 | 4 | 5 |
| | It totally lowered my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 68. I can't bear I absolutely must not lack confidence before doing something. | | | | | | |
| Because: | I couldn't stand doing it. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 69. I absolutely must not feel trapped. | | | | | | |
| Because: | I can't bear it. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 70. I absolutely must not be unfairly criticised. | | | | | | |
| Because: | I can't stand it. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem | 1 | 2 | 3 | 4 | 5 |
| 71. I absolutely must not have morbid thoughts. | | | | | | |
| Because: | I can't bear such thoughts. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 72. I absolutely shouldn't have to go to bed or get up when I don't want to. | | | | | | |
| Because: | I can't stand having to shift. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 73. I absolutely must not be treated with disrespect. | | | | | | |
| Because: | I can't tolerate such behaviour. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |
| 74. I absolutely shouldn't have to do things right away. | | | | | | |
| Because: | I can't stand being hassled. | 1 | 2 | 3 | 4 | 5 |
| | It would totally lower my self esteem. | 1 | 2 | 3 | 4 | 5 |

**APPENDIX 4**

**FRUSTRATION-DISCOMFORT SCALE (REVISED SHORT SCALE)**

**SUPPLEMENTARY ITEMS FOR FIVE FACTOR SCALE**

# FRUSTRATION-DISCOMFORT SCALE

NAME DATE

Listed below are a number of common thoughts and beliefs that people may have when they are distressed or frustrated. Please read each statement and decide how well this usually describes your own beliefs. Circle the number that best indicates the strength of this belief.

**RATING SCALE:** absent = 1 mild = 2 moderate = 3 strong = 4 very strong = 5

1 I need the easiest way around a problem; I can't stand making a hard time of it

1 2 3 4 5

2 I can't stand having to wait for things I would like now

1 2 3 4 5

3 I absolutely must be free of disturbing feelings as quickly as possible; I can't bear if they continue

1 2 3 4 5

4 I can't stand being prevented from achieving my full potential

1 2 3 4 5

5 I can't stand doing tasks that seem too difficult

1 2 3 4 5

6 I can't stand it if people act against my wishes

1 2 3 4 5

7 I can't bear to feel that I am losing my mind

1 2 3 4 5

8 I can't bear the frustration of not achieving my goals

1 2 3 4 5

9 I can't stand doing tasks when I'm not in the mood

1 2 3 4 5

**RATING SCALE:** absent = 1 mild = 2 moderate = 3 strong = 4 very strong = 5

10 I can't bear it if other people stand in the way of what I want

1 2 3 4 5

11 I can't bear to have certain thoughts

1 2 3 4 5

12 I can't tolerate lowering my standards even when it would be useful to do so

1 2 3 4 5

13 I can't stand having to push myself at tasks

1 2 3 4 5

14 I can't tolerate being taken for granted

1 2 3 4 5

15 I can't stand situations where I might feel upset

1 2 3 4 5

16 I can't bear to move on from work I'm not fully satisfied with

1 2 3 4 5

17 I can't stand the hassle of having to do things right now

1 2 3 4 5

18 I can't stand having to give into other people's demands

1 2 3 4 5

19 I can't bear disturbing feelings

1 2 3 4 5

20 I can't stand doing a job if I'm unable to do it well

1 2 3 4 5

21 I can't stand doing things that involve a lot of hassle

1 2 3 4 5

**RATING SCALE:** absent = 1 mild = 2 moderate = 3 strong = 4 very strong = 5

22 I can't stand having to change when others are at fault

1 2 3 4 5

23 I can't get on with my life, or be happy, if things don't change

1 2 3 4 5

24 I can't bear to feel that I'm not on top of my work

1 2 3 4 5

25 I can't stand having to persist at unpleasant tasks

1 2 3 4 5

26 I can't tolerate criticism especially when I know I'm right

1 2 3 4 5

27 I can't stand to lose control of my feelings

1 2 3 4 5

28 I can't tolerate any lapse in my self-discipline

1 2 3 4 5

**SUPPLEMENTARY ITEMS FOR FIVE FACTOR EXTENDED VERSION**

29 I can't tolerate being overlooked

1 2 3 4 5

30 I can't bear to have been treated unjustly

1 2 3 4 5

31 I can't stand being left in the dark with no explanations

1 2 3 4 5

32 I can't stand giving up immediate pleasures for the sake of a distant goal

1 2 3 4 5

33 I can't tolerate being treated with disrespect

1 2 3 4 5

34 I can't bear being deprived now of things I lacked in the past

1 2 3 4 5

35 I can't tolerate other people's bad or stupid behaviour

1 2 3 4 5

**APPENDIX 5**

**PATIENT INFORMATION/ CONSENT FORM**

Fife Primary Care
NHS TRUST

Our Ref:

DEPARTMENT OF CLINICAL PSYCHOLOGY

Stratheden Hospital
CUPAR
Fife
KY15 5RR

**Tel: (01334) 652611 Ext. 336**
Fax: (01334) 655380

Dear Patient,

The enclosed questionnaires are part of a project involving the University of Edinburgh and Stratheden hospital clinical psychology department. The aim of the study is to examine the nature and effect of different attitudes on emotional problems. It is hoped that the results will help to improve the understanding and assessment of psychological problems.

You may also be asked to complete further questionnaires at the beginning, and following therapy, to assess your progress in treatment. No other requirements will be made of you. Any information collected will of course be kept confidential and secure. Results will be reported in such a way that individual patients can not be identified (e.g. scores from questionnaires will be reported as averages). If you do not wish to be involved in the study this will not affect your treatment. You may stop participation at any time.

If you agree to participate please complete the consent form. Once you have completed the questionnaires please return these as soon as possible in the stamped addressed envelope. If you do have any questions regarding the project please contact me at the above address.

The results obtained will depend on the accuracy of your replies. **It is important that you answer every question and do not leave any blanks.**

Thank you for your time and cooperation.

Yours truly,

Neil Harrington.
Principal Clinical Psychologist.

---

## Patient Consent Form

I have read the above information about this research project.

I understand that the information I provide will be kept securely and treated in confidence.

I understand that participation is entirely voluntary. If I do not wish to complete the questionnaires I can withdraw from the study without prejudice to future treatment

I agree to participate in this study.

Signed date

# APPENDIX 6

## ROSENBERG SELF-ESTEEM SCALE

# ROSENBERG SCALE

**Put a tick in the appropriate box to show how you feel about yourself.**

| | Strongly disagree | Disagree | Agree | Strongly agree |
|---|---|---|---|---|
| 1. I feel that I am a person of worth, at least on an equal plane with others. | | | | |
| 2. All in all, I am inclined to feel that I am a failure. | | | | |
| 3. I feel that I have a number of good qualities. | | | | |
| 4. I am able to do things as well as most other people. | | | | |
| 5. I feel I do not have much to be proud of. | | | | |
| 6. I take a positive attitude towards myself. | | | | |
| 7. On the whole, I am satisfied with myself. | | | | |
| 8. I wish I could have more respect for myself. | | | | |
| 9. I certainly feel useless at times. | | | | |
| 10. At times I think I am no good at all. | | | | |

# APPENDIX 7

## DYSFUNCTIONAL COPING SCALE

# COPING METHODS SCALE

Described below are methods that people commonly use to cope with distress, discomfort, or frustration. For each statement please indicate how well it would describe your way of coping.

| | Not at all | Somewhat | Moderately | Very much so |
|---|---|---|---|---|
| 1. I avoid difficult situations. | 0 | 1 | 2 | 3 |
| 2. I withdraw from unpleasant situations. | 0 | 1 | 2 | 3 |
| 3. I mentally shut off. | 0 | 1 | 2 | 3 |
| 4. I restrict my eating by diet or exercise. | 0 | 1 | 2 | 3 |
| 5. I seek reassurance. | 0 | 1 | 2 | 3 |
| 6. I keep myself constantly 'busy'. | 0 | 1 | 2 | 3 |
| 7. I injure myself or overdose. | 0 | 1 | 2 | 3 |
| 8. I am distracted from tasks by activities that are more pleasant. | 0 | 1 | 2 | 3 |
| 9. I enlist the help of others. | 0 | 1 | 2 | 3 |
| 10. I put things off. | 0 | 1 | 2 | 3 |
| 11. I use alcohol for relief. | 0 | 1 | 2 | 3 |
| 12. I restrict myself to familiar routines (although I feel I'm in a rut). | 0 | 1 | 2 | 3 |
| 13. I use recreational drugs for relief. | 0 | 1 | 2 | 3 |
| 14. I become over involved in work or interests. | 0 | 1 | 2 | 3 |
| 15. I comfort eat. | 0 | 1 | 2 | 3 |
| 16. I restrict my eating by vomiting or laxatives. | 0 | 1 | 2 | 3 |
| 17. I overspend on unnecessary things. | 0 | 1 | 2 | 3 |
| 18. I go over and over worries in my mind. | 0 | 1 | 2 | 3 |
| 19. I rely on medication to obtain symptom relief. | 0 | 1 | 2 | 3 |

**APPENDIX 8**

**SCHEMA QUESTIONNAIRE (IMPAIRED LIMITS SUB-SCALES)**

# ATTITUDE QUESTIONNAIRE (SCHEMA)

INSTRUCTIONS: Listed below are statements that a person might use to describe himself or herself. Please read each statement and decide how well it describes you. When you are not sure, base your answer on what you emotionally **feel**, NOT what you **think** true. Then choose the highest rating from 1 to 6 that describes you, and circle the number next to the statement.

**RATING SCALE:**

| | |
|---|---|
| Completely Untrue of Me = 1 | Moderately True of Me = 4 |
| Mostly Untrue of Me = 2 | Mostly True of Me = 5 |
| Slightly More True then Untrue = 3 | Describes Me Perfectly = 6 |

1. I have a lot of trouble accepting "no" for an answer when I want something from other people.

   1 2 3 4 5 6

2. I often get angry or irritable if I can't get what I want.

   1 2 3 4 5 6

3. I hate to be constrained or kept from doing what I want.

   1 2 3 4 5 6

4. I get very irritated when people won't do what I ask of them.

   1 2 3 4 5 6

5. I can't tolerate other people telling me what to do.

   1 2 3 4 5 6

6. I have great difficult getting myself to stop drinking, smoking, overeating, or other problem behaviors.

   1 2 3 4 5 6

7. I can't seem to discipline myself to complete routine or boring tasks.

   1 2 3 4 5 6

8. If I can't reach a goal, I become easily frustrated and give up.

   1 2 3 4 5 6

9. I have a very difficult time sacrificing immediate gratification to achieve a long – range goal.

1 2 3 4 5 6

10. It often happens that, once I start to feel angry, I just can't control it.

1 2 3 4 5 6

11. I tend to overdo things, even though I know they are bad for me.

1 2 3 4 5 6

12. I get bored very easily.

1 2 3 4 5 6

13. When tasks become difficult, I usually cannot persevere and complete them.

1 2 3 4 5 6

14. I can't concentrate on anything for to long.

1 2 3 4 5 6

15. I can't force myself to do thing I don't enjoy, even when I know it's for my own good.

1 2 3 4 5 6

16. I lose my temper at the slightest offense.

1 2 3 4 5 6

17. I have rarely been able to stick to my resolutions.

1 2 3 4 5 6

18. I can almost never hold back from showing people how I really feel, no matter what the cost may be.

1 2 3 4 5 6

19. I often do things impulsively that I later regret.

1 2 3 4 5 6

# APPENDIX 9

## DYSFUNCTIONAL ATTITUDE SCALE (DAS)

# D A S QUESTIONNAIRE

(S-C SCALE)

This scale lists different attitudes or beliefs which people sometimes hold. Please read each statement carefully and decide how much you agree or disagree with what it says.

For each of the attitudes, please indicate your answer by placing a tick (√) under the column that best describes how you think. Be sure to choose only one answer for each attitude. But please note that because people are different, there is no right or wrong answer to these statements.

To decide whether a given answer is typical of your way of looking at things, simply keep in mind what you are like most of the time.

| | totally disagree | disagree very much | disagree slightly | neutral | agree slightly | agree very much | totally agree |
|---|---|---|---|---|---|---|---|
| 1. I should be happy all the time. | | | | | | | |
| 2. I should always have complete control over my feelings. | | | | | | | |
| 3. I ought to be able to solve my problems quickly and without a great deal of effort. | | | | | | | |
| 4. A person should be able to control what happens to him. | | | | | | | |
| 5. It is possible for a person to be scolded and not get upset. | | | | | | | |
| 6. A person should do well at everything he undertakes. | | | | | | | |
| 7. If I try hard enough, I should be able to excel at anything I attempt. | | | | | | | |
| 8. Whenever I take a chance or risk I am only looking for trouble. | | | | | | | |

# APPENDIX 10

## TRAIT ANGER SCALE

# TRAIT ANGER SCALE

A number of statements that people use to describe themselves are given below. Read each statement and then circle the number which indicates how you **generally** feel. Remember that there are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to best describe how you **generally** feel.

1. I am quick tempered.

| almost never | sometimes | often | almost always |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

2. I have a fiery temper.

| almost never | sometimes | often | almost always |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

3. I am a hotheaded person.

| almost never | sometimes | often | almost always |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

4. I get angry when I'm slowed down by others' mistakes.

| almost never | sometimes | often | almost always |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

5. I feel annoyed when I am not given the recognition for doing good work.

| almost never | sometimes | often | almost always |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

6. I fly off the handle.

| almost never | sometimes | often | almost always |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

7. When I get mad, I say nasty things.

| almost never | sometimes | often | almost always |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

8. It makes me furious when I am criticized in front of others.

| almost never | sometimes | often | almost always |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

9. When I get frustrated, I feel like hitting someone.

| almost never | sometimes | often | almost always |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

10. I feel infuriated when I do a good job and get a poor evaluation.

| almost never | sometimes | often | almost always |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

**APPENDIX 11**

**HOSPITAL ANXIETY AND DEPRESSION SCALE (HAD)**

# HAD SCALE

**This questionnaire is designed to help us to know how you feel. Read each item and place a firm tick in the box opposite the reply which comes closest to how you have been feeling in the past week.**
**Don't take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought-out response.**

Tick Only One Box in Each Section

### I Feel Tense or 'Wound Up'

Most of the time
A lot of the time
Time to time, occasionally
Not at all

### I Feel as if I am Slowed Down

Nearly all the time
Very often
Sometimes
Not at all

### I Still Enjoy the Things I Used to Enjoy

Definitely as much
Not quite so much
Only a little
Hardly at all

### I Get a Sort of Frightened Feeling Like 'Butterflies' in the Stomach

Not at all
Occasionally
Quite often
Very often

### I Get a Sort of Frightened Feeling as if Something Awful is About to Happen

Very definitely and quite badly
Yes, but not too badly
A little, but it doesn't worry me
Not at all

### I Have Lost Interest in my Appearance

Definitely
I don't take so much care as I should
I may not take quite as much care
I take just as much care as ever

### I Can Laugh and See the Funny Side of Things

As much as I always could
Not quite so much now
Definitely not so much now
Not at all

### I Feel Restless as if I Have to be on the Move

Very much indeed
Quite a lot
Not very much
Not at all

### Worrying Thoughts Go Through My Mind

A great deal of the time
A lot of the time
From time to time but not too often
Only occasionally

### I Look Forward With Enjoyment To Things

As much as ever I did
Rather less than I used to
Definitely less than I used to
Hardly at all

### I Feel Cheerful

Not at all
Not often
Sometimes
Most of the time

### I Get Sudden Feelings of Panic

Very often indeed
Quite often
Not very often
Not at all

### I Can Sit at Ease and Feel Relaxed

Definitely
Usually
Not often
Not at all

### I Can Enjoy a Good Book or Radio or TV Programme

Often
Sometimes
Not often
Very seldom

# APPENDIX 12

# BACKGROUND INFORMATION QUESTIONNAIRE

# BACKGROUND INFORMATION

**HOW INTENSELY HAVE YOU EXPERIENCED THE FOLLOWING FEELINGS IN THE PAST MONTH?**

| | NOT AT ALL | SLIGHTLY | MODERATELY | VERY MUCH SO |
|---|---|---|---|---|
| ANXIETY | 0 | 1 | 2 | 3 |
| WORTHLESSNESS | 0 | 1 | 2 | 3 |
| DEPRESSED MOOD | 0 | 1 | 2 | 3 |
| JEALOUSY | 0 | 1 | 2 | 3 |
| GUILT | 0 | 1 | 2 | 3 |
| ANGER | 0 | 1 | 2 | 3 |
| HURT | 0 | 1 | 2 | 3 |
| TENSION | 0 | 1 | 2 | 3 |
| EMBARRASSMENT | 0 | 1 | 2 | 3 |

**Please underline the <u>main feeling</u> that most clearly describes your current problem.**

**HOW LONG HAS THIS PROBLEM AFFECTED YOU?**

LESS THAN 6 MONTHS ☐
6-12 MONTHS ☐
1-3 YEARS ☐
MORE THAN 3 YEARS ☐

**AT PRESENT HOW MUCH DOES THIS PROBLEM AFFECT YOUR EVERYDAY LIFE?**

| NOT AT ALL | SLIGHTLY | MODERATELY | SEVERELY |
|---|---|---|---|
| 0 | 1 | 2 | 3 |

**PREVIOUS TREATMENT**

NONE ☐
PSYCHOLOGICAL THERAPY/COUNSELLING ☐
COMMUNITY NURSING ☐
PSYCHIATRIC OUT-PATIENT ☐
PSYCHIATRIC DAY/IN-PATIENT ☐

**HOW LONG HAVE YOU TAKEN MEDICATION FOR YOUR PROBLEM?**

NONE ☐
LESS THAN A YEAR ☐
1-3 YEARS ☐
MORE THEN 3 YEARS ☐

## APPENDIX 13

## PROCRASTINATION ASSESSMENT SCALE-STUDENTS (PASS)

## PASS SCALE

For each of the following activities, please rate the degree to which you delay or procrastinate. Rate each item on an A to E scale according to how often you wait until the last minute to do the activity. Then, indicate on an A to E scale the degree to which you feel procrastination on that task is a problem.

**A. WRITING A TERM PAPER.**

**1** To what degree do you procrastinate on this task?

| Never Procrastinate | Almost Never | Sometimes | Nearly Always | Always Procrastinate |
|---|---|---|---|---|
| a | b | c | d | e |

**2** To what degree is procrastination on this task a problem for you?

| Not at all a problem | Almost Never | Sometimes | Nearly Always | Always a problem |
|---|---|---|---|---|
| a | b | c | d | e |

**B. STUDYING FOR EXAMS.**

**3** To what degree do you procrastinate on this task?

| Never Procrastinate | Almost Never | Sometimes | Nearly Always | Always Procrastinate |
|---|---|---|---|---|
| a | b | c | d | e |

**4** To what degree is procrastination on this task a problem for you?

| Not at all a problem | Almost Never | Sometimes | Nearly Always | Always a problem |
|---|---|---|---|---|
| a | b | c | d | e |

**C. KEEPING UP WITH WEEKLY READING ASSIGNMENTS.**

**5** To what degree do you procrastinate on this task?

| Never Procrastinate | Almost Never | Sometimes | Nearly Always | Always Procrastinate |
|---|---|---|---|---|
| a | b | c | d | e |

**6** To what degree is procrastination on this task a problem for you?

| Not at all a problem | Almost Never | Sometimes | Nearly Always | Always a problem |
|---|---|---|---|---|
| a | b | c | d | e |

## REASONS FOR PROCRASTINATION

Think of the last time the following situation occurred: It's near the end of the semester. The term paper you were assigned at the beginning of the semester is due very soon. You have not begun work on this paper. There are reasons why you have been procrastinating on this task.

Rate each of the following reasons on a 5-point scale according to how much it reflects why you procrastinated at the time.

| | Not at all reflects why I procrastinated | | Somewhat Reflects | | Definitely reflects why I procrastinated |
|---|---|---|---|---|---|
| 1. You were concerned the lecturer wouldn't like your work. | a | b | c | d | e |
| 2. You had a hard time knowing what to include and what not to include in your paper. | a | b | c | d | e |
| 3. You waited until a classmate did his/hers, so that he/she could give you some advice. | a | b | c | d | e |
| 4. You had too many other things to do. | a | b | c | d | e |
| 5. There's some information you needed to ask the lecturer, but you felt uncomfortable approaching him/her. | a | b | c | d | e |
| 6. You were worried you would get a bad grade. | a | b | c | d | e |
| 7. You resented having to do things assigned by others. | a | b | c | d | e |
| 8. You didn't think you knew enough to write the paper. | a | b | c | d | e |
| 9. You really dislike writing term papers. | a | b | c | d | e |
| 10. You felt overwhelmed by the task. | a | b | c | d | e |
| 11. You had difficulty requesting information from other people. | a | b | c | d | e |

| | | | | | |
|---|---|---|---|---|---|
| 12. You looked forward to the excitement of doing this task at the last minute. | a | b | c | d | e |
| 13. You couldn't choose among all the topics. | a | b | c | d | e |
| 14. You were concerned that if you did well, your classmates would resent you. | a | b | c | d | e |
| 15. You didn't trust yourself to do a good job. | a | b | c | d | e |
| 16. You didn't have enough energy to begin the task. | a | b | c | d | e |
| 17. You felt it just takes too long to write a term paper. | a | b | c | d | e |
| 18. You liked the challenge of waiting until the deadline. | a | b | c | d | e |
| 19. You know that your classmates hadn't started the paper either. | a | b | c | d | e |
| 20. You resented people setting deadlines for you. | a | b | c | d | e |
| 21. You were concerned you wouldn't meet your own expectations. | a | b | c | d | e |
| 22. You were concerned that if you got a good grade, people would have higher expectations of you in the future. | a | b | c | d | e |
| 23. You waited to see if the lecturer would give you some more information about the paper. | a | b | c | d | e |
| 24. You set very high standards for yourself and you worried that you wouldn't be able to meet those standards. | a | b | c | d | e |
| 25. You just felt too lazy to write a term paper. | a | b | c | d | e |
| 26. Your friends were pressuring you to do other things. | a | b | c | d | e |

## APPENDIX 14

## SKEWNESS AND KURTOSIS ANALYSIS (PRELIMINARY SCALE)

Appendix 15 Item frequency distribution: Combined sample (Preliminary scale)

| | upset others | risk rejection | boring tasks | diet control | painful memory | power-less | sacrifices |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| absent | 5.8% | 12.9% | 21.0% | 51.7% | 20.5% | 7.4% | 46.3% |
| mild | 8.2% | 19.6% | 17.3% | 20.4% | 19.9% | 16.6% | 25.9% |
| moderate | 32.8% | 24.2% | 21.6% | 14.3% | 24.2% | 21.8% | 17.1% |
| strong | 32.8% | 24.8% | 22.5% | 5.5% | 19.3% | 32.6% | 7.0% |
| very strong | 20.4% | 18.4% | 17.6% | 8.2% | 16.2% | 21.5% | 3.7% |

| | safe situation | doubts | past injustice | waste time | unfinish work | disagree-ments | continue situation |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| absent | 23.2% | 8.3% | 19.3% | 21.0% | 11.2% | 12.2% | 21.3% |
| mild | 19.5% | 21.1% | 19.3% | 23.2% | 20.7% | 17.6% | 13.1% |
| moderate | 18.9% | 22.9% | 17.1% | 20.1% | 25.5% | 22.5% | 11.9% |
| strong | 14.9% | 27.5% | 20.8% | 22.3% | 25.8% | 23.7% | 19.5% |
| very strong | 23.5% | 20.2% | 23.5% | 13.4% | 16.7% | 24.0% | 34.1% |

| | loss | ignored | restriction | task hassle | support | unfair life | buzz |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| absent | 19.0% | 22.9% | 12.2% | 28.7% | 19.5% | 33.4% | 41.3% |
| mild | 20.5% | 21.0% | 18.6% | 20.7% | 21.9% | 18.2% | 14.4% |
| moderate | 18.7% | 26.5% | 29.0% | 24.4% | 17.9% | 15.2% | 19.6% |
| strong | 15.9% | 22.0% | 22.6% | 16.5% | 22.5% | 13.1% | 17.1% |
| very strong | 26.0% | 7.6% | 17.7% | 9.8% | 18.2% | 20.1% | 7.6% |

| | freedom from hassles | opposit-ional beliefs | waiting | craziness | understan d- ing | extra problems | relation work |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| absent | 22.6% | 19.5% | 23.4% | 14.7% | 7.6% | 11.9% | 28.6% |
| mild | 30.5% | 24.7% | 27.4% | 11.3% | 13.4% | 18.8% | 19.8% |
| moderate | 20.1% | 25.3% | 22.8% | 15.9% | 25.6% | 23.1% | 20.7% |
| strong | 15.2% | 18.0% | 15.8% | 23.9% | 29.0% | 22.2% | 16.1% |
| very strong | 11.6% | 12.5% | 10.6% | 34.3% | 24.4% | 24.0% | 14.9% |

Appendix 15 (continued)

| | slipping back | appreciation | emotional neglect (parents) | upsetting tasks | alone | relation difficulty | oppositional acts |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| absent | 15.6% | 9.4% | 47.4% | 17.0% | 39.5% | 21.6% | 33.5% |
| mild | 12.6% | 14.9% | 13.3% | 23.1% | 24.0% | 26.5% | 28.0% |
| moderate | 20.2% | 26.7% | 9.9% | 22.8% | 14.9% | 25.3% | 23.8% |
| strong | 23.3% | 25.8% | 10.2% | 20.4% | 12.2% | 16.5% | 10.7% |
| very strong | 28.2% | 23.1% | 19.2% | 16.7% | 9.4% | 10.1% | 4.0% |

| | comfortable | taking time | lapse of self-discipline | disturbed feelings | being understood | emotional control | confident |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| absent | 40.6% | 41.2% | 29.9% | 14.0% | 21.9% | 7.6% | 18.2% |
| mild | 20.0% | 20.7% | 24.1% | 18.5% | 28.3% | 19.0% | 20.7% |
| moderate | 19.4% | 14.0% | 16.5% | 23.7% | 24.6% | 22.0% | 24.9% |
| strong | 14.2% | 18.3% | 16.2% | 23.1% | 18.2% | 24.2% | 21.9% |
| very strong | 5.8% | 5.8% | 13.4% | 20.7% | 7.0% | 27.2% | 14.3% |

| | noise | self conscious | suppress emotions | easy solutions | disorganisation | excitement | time pressure |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| absent | 35.0% | 27.1% | 24.6% | 25.8% | 14.6% | 20.4% | 15.2% |
| mild | 23.1% | 16.4% | 20.1% | 22.5% | 18.2% | 20.4% | 17.9% |
| moderate | 17.9% | 21.6% | 20.7% | 22.5% | 20.1% | 27.1% | 22.2% |
| strong | 15.8% | 14.9% | 19.8% | 18.2% | 24.6% | 19.1% | 22.5% |
| very strong | 8.2% | 20.1% | 14.9% | 10.9% | 22.5% | 13.1% | 22.2% |

| | interfere from others | self change | emotional deprive (now) | let down | effort | task obstruct | personal flaws |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| absent | 22.3% | 52.0% | 41.6% | 8.5% | 33.4% | 14.1% | 15.3% |
| mild | 21.6% | 19.0% | 16.8% | 20.7% | 27.4% | 19.0% | 19.0% |
| moderate | 23.8% | 16.2% | 14.4% | 23.2% | 19.8% | 28.1% | 22.6% |
| strong | 20.4% | 8.3% | 12.5% | 25.3% | 11.6% | 28.4% | 24.2% |
| very strong | 11.9% | 4.6% | 14.7% | 22.3% | 7.9% | 10.4% | 19.0% |

Appendix 15 (continued)

| | thoughts | persist | below par | neglect of others | gratificat-ion delay | submis-sion | disrupted routines |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| absent | 25.2% | 25.9% | 8.8% | 22.3% | 37.3% | 25.6% | 29.6% |
| mild | 13.1% | 26.2% | 14.0% | 9.8% | 25.1% | 23.8% | 27.1% |
| moderate | 17.3% | 23.5% | 21.3% | 17.4% | 22.3% | 25.0% | 20.7% |
| strong | 19.5% | 17.7% | 26.1% | 22.0% | 9.8% | 15.9% | 14.3% |
| very strong | 24.9% | 6.7% | 29.8% | 28.7% | 5.5% | 9.8% | 8.2% |

| | quick emotional relief | task perfect | difficult tasks | relation loss | in the mood | trapped | unfair change |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| absent | 11.9% | 7.3% | 40.7% | 17.7% | 8.2% | 8.2% | 13.5% |
| mild | 14.3% | 11.9% | 23.7% | 15.5% | 19.5% | 11.9% | 16.0% |
| moderate | 19.2% | 22.2% | 16.7% | 19.8% | 26.4% | 21.3% | 25.2% |
| strong | 25.3% | 30.4% | 12.2% | 21.3% | 28.0% | 23.8% | 26.4% |
| very strong | 29.3% | 28.3% | 6.7% | 25.6% | 17.9% | 34.8% | 19.0% |

| | morbid thoughts | indulge | respect | task interest |
|---|---|---|---|---|
| | % | % | % | % |
| absent | 24.8% | 22.9% | 9.8% | 15.0% |
| mild | 17.1% | 19.8% | 15.3% | 19.6% |
| moderate | 15.9% | 28.7% | 26.9% | 26.9% |
| strong | 19.6% | 18.9% | 31.5% | 24.5% |
| very strong | 22.6% | 9.8% | 16.5% | 14.1% |

**Appendix 16 Four-factor component Matrix (Preliminary scale)[a]**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| extra problems | .705 | | | |
| disturbed feelings | .691 | -.338 | | |
| easy solutions | .687 | | | |
| upsetting tasks | .679 | | | |
| interference from others | .654 | | | |
| quick emotional relief | .645 | -.386 | | |
| freedom from hassles | .638 | | | |
| time pressure | .638 | | | |
| let down | .631 | | | |
| unfair life | .628 | | | |
| confidence | .622 | | | |
| slipping back | .600 | | | |
| emotional deprivation (now) | .599 | | | |
| disrupted routines | .599 | | | .358 |
| understanding | .598 | | | |
| gratification delay | .598 | | | |
| being understood | .593 | | | |
| trapped | .590 | | | |
| emotional control | .585 | | | |
| comfortable | .578 | | | |
| doubts | .577 | | | |
| loss | .576 | | | |
| morbid thoughts | .572 | -.351 | | |
| thoughts | .571 | -.395 | | |
| relationship difficulty | .571 | | | |
| disrespect | .571 | .430 | | |
| painful memories | .570 | | | |
| appreciation | .569 | .384 | | |
| task obstruction | .566 | .421 | | |
| effort | .560 | | -.315 | |
| persistence | .560 | | -.397 | |
| waiting | .556 | .305 | | |
| in the mood | .553 | | -.334 | |
| oppositional acts | .553 | .336 | | |
| support | .552 | | | |
| below par | .548 | | | |
| past injustice | .548 | | | |
| submission | .520 | .334 | | |
| difficult tasks | .514 | | -.338 | .304 |
| oppositional beliefs | .513 | .392 | | |
| relationship work | .513 | | | -.302 |
| unfair change | .510 | .339 | | |
| disorganisation | .510 | | .413 | .371 |
| craziness | .507 | | | |
| continuing situation | .496 | -.338 | | |
| safe situation | .495 | | | |
| task interest | .491 | | -.371 | |
| task hassle | .490 | | -.407 | |

Extraction Method: Principal Component Analysis.

**Appendix 16 Four-factor component Matrix (Preliminary scale)[a]**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| lapse of self-discipline | .488 | | .449 | |
| relationship loss | .484 | | | |
| neglect of others | .480 | | | |
| emotional neglect (parents) | .478 | | | |
| self conscious | .468 | | | |
| restriction | .449 | .329 | | |
| self change | .449 | | | .309 |
| ignored | .438 | .377 | | |
| risk rejection | .433 | | | |
| sacrifices | .427 | | | |
| taking time | .426 | | | |
| task perfectionism | .425 | | .396 | |
| disagreements | .418 | | | |
| powerless | .413 | | | |
| indulge | .398 | | -.386 | |
| buzz | .341 | .302 | | |
| unfinished work | .355 | | .501 | .377 |
| waste time | .302 | | .499 | |

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

**Appendix 17 Four-factor rotated component matrix: Complete item loadings (Preliminary scale)**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| quick emotional relief | .716 | 9.932E-02 | .257 | 8.053E-02 |
| disturbed feelings | .709 | .129 | .265 | .174 |
| thoughts | .680 | 4.304E-02 | .208 | 8.620E-02 |
| continuing situation | .647 | 3.585E-02 | 6.396E-02 | .146 |
| extra problems | .627 | .156 | .379 | .154 |
| slipping back | .599 | .219 | 4.801E-02 | .283 |
| morbid thoughts | .576 | 5.203E-02 | .333 | 8.072E-02 |
| unfair life | .569 | .321 | .199 | 4.459E-02 |
| painful memories | .569 | .178 | .186 | .112 |
| craziness | .562 | .201 | 3.406E-03 | .170 |
| emotional control | .547 | .110 | .199 | .279 |
| emotional deprivation (now) | .544 | .376 | .116 | 4.195E-02 |
| loss | .534 | .185 | .245 | 9.468E-02 |
| upsetting tasks | .522 | .150 | .475 | .138 |
| easy solutions | .516 | .181 | .480 | .118 |
| support | .487 | .253 | .216 | 5.050E-02 |
| emotional neglect (parents) | .444 | .310 | -3.761E-02 | .191 |
| safe situation | .437 | 6.541E-03 | .361 | .132 |
| relationship loss | .426 | .265 | .180 | -8.604E-03 |
| risk rejection | .405 | .162 | .180 | 3.465E-02 |
| neglect of others | .392 | .332 | 2.735E-02 | .162 |
| disagreements | .391 | -7.172E-02 | .305 | .192 |
| trapped | .389 | .359 | .194 | .209 |
| below par | .366 | .121 | .299 | .336 |
| powerless | .342 | .227 | -2.950E-03 | .260 |
| appreciation | .199 | .663 | .113 | .146 |
| disrespect | .123 | .654 | .170 | .221 |
| ignored | .128 | .619 | 5.691E-02 | 3.623E-02 |
| oppositional acts | .161 | .605 | .213 | .111 |
| oppositional beliefs | 8.534E-02 | .596 | .195 | .170 |
| gratification delay | .149 | .532 | .335 | .198 |
| unfair change | 4.286E-02 | .530 | .324 | .151 |
| task obstruction | 6.671E-02 | .524 | .201 | .461 |
| buzz | .119 | .522 | 1.953E-02 | -3.084E-02 |
| understanding | .344 | .518 | 8.638E-02 | .230 |
| restriction | .156 | .515 | 3.752E-02 | .207 |
| indulge | 3.720E-02 | .513 | .323 | -.142 |
| submission | 4.318E-02 | .509 | .332 | .198 |
| let down | .345 | .499 | .222 | .158 |
| relationship difficulty | .322 | .483 | .172 | .119 |
| waiting | 7.709E-02 | .454 | .332 | .328 |
| being understood | .365 | .444 | .149 | .197 |
| relationship work | .406 | .433 | 7.589E-02 | 9.644E-03 |
| past injustice | .382 | .421 | .135 | 8.845E-02 |
| confidence | .289 | .377 | .258 | .364 |
| difficult tasks | .218 | 4.617E-02 | .680 | 5.976E-02 |

**Appendix 17 Four-factor rotated component matrix: Complete item loadings (Preliminary scale)**

| | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| persistence | .156 | .295 | .623 | 1.161E-02 |
| time pressure | .340 | .132 | .610 | .176 |
| in the mood | .219 | .205 | .607 | 3.946E-02 |
| task interest | 5.854E-02 | .277 | .594 | 5.601E-02 |
| effort | .282 | .203 | .567 | 5.959E-03 |
| self change | .108 | .112 | .548 | .160 |
| task hassle | .187 | .270 | .543 | -9.382E-02 |
| freedom from hassles | .418 | .148 | .539 | .115 |
| disrupted routines | .210 | .163 | .515 | .390 |
| comfortable | .304 | .283 | .501 | -6.644E-03 |
| interference from others | .227 | .351 | .441 | .344 |
| self conscious | .351 | -4.973E-02 | .386 | .260 |
| sacrifices | 6.717E-02 | .314 | .369 | .125 |
| unfinished work | 5.416E-02 | .109 | 2.652E-02 | .745 |
| disorganisation | .183 | .140 | .173 | .710 |
| lapse of self-discipline | .243 | .153 | 7.772E-02 | .655 |
| waste time | 9.469E-02 | .101 | -5.688E-02 | .649 |
| task perfectionism | .165 | .207 | 3.779E-02 | .587 |
| taking time | .182 | .117 | .195 | .465 |
| doubts | .312 | .206 | .282 | .414 |

**Appendix 18 Five-factor rotated component matrix (preliminary scale)[a]**

| | Component | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| disturbed feelings | .698 | | | | |
| quick emotional relief | .689 | | | | |
| thoughts | .644 | | | | |
| continuing situation | .640 | | | | |
| extra problems | .624 | | .374 | | |
| unfair life | .577 | .321 | | | |
| slipping back | .571 | | | | |
| painful memories | .569 | | | | |
| loss | .567 | | | | |
| emotional deprivation (now) | .563 | .379 | | | |
| morbid thoughts | .532 | | .349 | | .330 |
| upsetting tasks | .529 | | .466 | | |
| easy solutions | .528 | | .469 | | |
| emotional control | .516 | | | | |
| support | .507 | | | | |
| craziness | .494 | | | | .468 |
| safe situation | .480 | | .335 | | |
| emotional neglect (parents) | .463 | .315 | | | |
| disagreements | .443 | | | | -.302 |
| relationship loss | .429 | | | | |
| risk rejection | .422 | | | | |
| neglect of others | .348 | .322 | | | .312 |
| powerless | .340 | | | | |
| appreciation | | .664 | | | |
| disrespect | | .651 | | | |
| ignored | | .622 | | | |
| oppositional acts | | .613 | | | |
| oppositional beliefs | | .597 | | | |
| gratification delay | | .537 | .324 | | |
| task obstruction | | .526 | | .453 | |
| unfair change | | .524 | .338 | | |
| restriction | | .517 | | | |
| understanding | .333 | .516 | | | |
| buzz | | .516 | | | |
| submission | | .509 | .335 | | |
| indulge | | .507 | .334 | | |
| let down | .339 | .498 | | | |
| relationship difficulty | .350 | .489 | | | |
| waiting | | .458 | .328 | .327 | |
| being understood | .350 | .442 | | | |
| relationship work | .409 | .433 | | | |
| past injustice | .406 | .426 | | | |
| confidence | .301 | .383 | | .371 | |
| difficult tasks | | | .680 | | |
| persistence | | | .625 | | |
| in the mood | | | .624 | | |
| task interest | | | .613 | | |
| time pressure | .328 | | .613 | | |
| effort | | | .565 | | |
| self change | | | .539 | | |
| task hassle | | | .533 | | |
| freedom from hassles | .444 | | .523 | | |
| disrupted routines | | | .508 | .396 | |
| comfortable | .334 | | .485 | | |
| interference from others | | .354 | .438 | .345 | |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

**Appendix 18 Five-factor rotated component matrix (preliminary scale)[a]**

| | Component | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| self conscious | .340 | | .387 | | |
| sacrifices | | .325 | .347 | | |
| unfinished work | | | | .752 | |
| disorganisation | | | | .713 | |
| lapse of self-discipline | | | | .651 | |
| waste time | | | | .651 | |
| task perfectionism | | | | .574 | |
| taking time | | | | .469 | |
| doubts | .337 | | | .428 | |
| below par | .308 | | .322 | .322 | .387 |
| trapped | .338 | .348 | | | .358 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 13 iterations.

**Appendix 19 Six-factor rotated component matrix[a]**

| | Component | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| appreciation | .654 | | | | | |
| disrespect | .644 | | | | | |
| ignored | .613 | | | | | |
| oppositional beliefs | .602 | | | | | |
| oppositional acts | .590 | | | | | |
| submission | .575 | | | | | |
| unfair change | .566 | | .307 | | | |
| gratification delay | .553 | | | | | |
| indulge | .542 | | .305 | | | |
| restriction | .525 | | | | | |
| understanding | .519 | | | | | |
| task obstruction | .516 | | | .461 | | |
| buzz | .505 | | | | | |
| waiting | .488 | | | .316 | | |
| relationship difficulty | .487 | | | | | |
| let down | .433 | | | | .411 | |
| being understood | .414 | | | | | |
| past injustice | .402 | | | | .301 | |
| relationship work | .385 | | | | .374 | |
| morbid thoughts | | .705 | | | | |
| thoughts | | .690 | | | | |
| quick emotional relief | | .690 | | | | |
| disturbed feelings | | .661 | | | | |
| craziness | | .615 | | | | |
| painful memories | | .579 | | | | .326 |
| continuing situation | | .550 | | | | |
| extra problems | | .547 | .348 | | | |
| below par | | .502 | | .318 | | |
| emotional control | | .501 | | | | |
| slipping back | | .476 | | | .417 | |
| upsetting tasks | | .469 | .417 | | | .311 |
| trapped | .366 | .442 | | | | |
| unfair life | | .415 | | | .373 | |
| difficult tasks | | | .694 | | | |
| in the mood | | | .645 | | | |
| time pressure | | | .621 | | | |
| persistence | .311 | | .615 | | | |
| task interest | .312 | | .608 | | | |
| effort | | | .598 | | | |
| self change | | | .548 | | | |
| disrupted routines | | | .493 | .389 | | |
| freedom from hassles | | .330 | .474 | | | .372 |
| comfortable | | | .471 | | | |
| task hassle | .333 | | .464 | | | |
| easy solutions | | .383 | .458 | | | |
| self conscious | | | .430 | | | |
| interference from others | .362 | | .423 | .341 | | |
| sacrifices | .312 | | .323 | | | |
| unfinished work | | | | .745 | | |
| disorganisation | | | | .707 | | |
| lapse of self-discipline | | | | .666 | | |
| waste time | | | | .619 | | |
| task perfectionism | | | | .595 | | |
| taking time | | | | .466 | | |
| doubts | | | | .398 | | .374 |
| confidence | .326 | | | .378 | .354 | |
| powerless | | | | | | |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

**Appendix 19 Six-factor rotated component matrix[a]**

| | Component | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| emotional deprivation (now) | | | | | .669 | |
| emotional neglect (parents) | | | | | .577 | |
| relationship loss | | | | | .474 | |
| risk rejection | | | | | .430 | |
| support | | | | | .385 | |
| neglect of others | | .318 | | | .365 | |
| disagreements | | | | | | .526 |
| loss | | .413 | | | | .435 |
| safe situation | | | .317 | | | .405 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Appendix 20 Frustration-Discomfort Revised scale: Frequency analysis

| | Painful memory | Time pressure | gratifica-tion | waiting | Quick emotional relief | Task interest | oppose acts |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| 1 | 8.7% | 4.5% | 12.3% | 6.6% | 7.6% | 8.7% | 9.6% |
| 2 | 19.6% | 15.1% | 27.6% | 16.6% | 20.2% | 28.0% | 28.3% |
| 3 | 31.6% | 28.1% | 25.5% | 26.2% | 17.5% | 27.1% | 35.2% |
| 4 | 23.8% | 34.7% | 21.3% | 31.9% | 30.5% | 20.2% | 16.3% |
| 5 | 16.3% | 17.5% | 13.2% | 18.7% | 24.2% | 16.0% | 10.5% |

| | Unfair life | Disorgani sation | Crazy | Ignored | Potential | Thoughts | Easy solution |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| 1 | 20.2% | 7.2% | 17.5% | 14.5% | 10.8% | 10.8% | 14.2% |
| 2 | 22.0% | 24.7% | 14.8% | 26.0% | 13.6% | 19.9% | 28.2% |
| 3 | 22.3% | 20.5% | 14.5% | 25.4% | 27.7% | 13.6% | 26.1% |
| 4 | 17.5% | 30.4% | 25.7% | 20.2% | 26.5% | 25.6% | 19.7% |
| 5 | 18.1% | 17.2% | 27.5% | 13.9% | 21.4% | 30.1% | 11.8% |

| | task Obstruct | Past injustice | Goal frustration | Upsetting situations | Difficult tasks | Personal standard | Extra problems |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| 1 | 13.9% | 5.1% | 7.5% | 7.2% | 17.2% | 13.3% | 8.4% |
| 2 | 29.1% | 14.7% | 16.5% | 19.6% | 34.9% | 26.0% | 24.4% |
| 3 | 32.4% | 18.2% | 22.5% | 24.7% | 23.2% | 27.8% | 28.9% |
| 4 | 14.8% | 37.3% | 36.3% | 27.7% | 16.0% | 18.1% | 21.4% |
| 5 | 9.7% | 24.7% | 17.1% | 20.8% | 8.7% | 14.8% | 16.9% |

| | In the mood | Understa nding | Task satisfy | Disturbed feelings | Effort | Appreciat ion | Task perfect |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| 1 | 4.5% | 3.9% | 14.6% | 8.7% | 23.9% | 9.9% | 8.4% |
| 2 | 24.1% | 13.9% | 23.1% | 14.5% | 33.8% | 21.1% | 21.3% |
| 3 | 32.2% | 22.9% | 28.0% | 22.3% | 24.8% | 23.8% | 27.9% |
| 4 | 22.6% | 32.2% | 21.3% | 25.3% | 12.1% | 26.2% | 29.4% |
| 5 | 16.6% | 27.1% | 13.1% | 29.2% | 5.4% | 19.0% | 12.9% |

Appendix 20 (continued) Frustration-Discomfort Revised scale: Frequency analysis

| | Task Hassle | Consider ation | Doubts | Freedom from hassles | Sub-mission | Continue situation | Work control |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| 1 | 15.9% | 3.3% | 8.4% | 21.5% | 9.6% | 20.2% | 5.4% |
| 2 | 28.8% | 18.3% | 20.1% | 31.7% | 31.3% | 15.7% | 15.4% |
| 3 | 29.4% | 27.0% | 28.2% | 21.1% | 30.7% | 16.3% | 26.6% |
| 4 | 14.1% | 32.4% | 24.9% | 16.9% | 21.1% | 22.3% | 35.3% |
| 5 | 11.7% | 18.9% | 18.3% | 8.8% | 7.2% | 25.6% | 17.2% |

| | Indulge | Dis-respect | Self-discipline | Morbid thoughts | Task hassle | Unfair change | Waste time |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| 1 | 24.5% | 4.5% | 14.2% | 14.5% | 12.1% | 7.8% | 15.5% |
| 2 | 27.3% | 12.4% | 29.3% | 21.7% | 29.6% | 18.1% | 21.9% |
| 3 | 28.5% | 24.8% | 26.3% | 19.0% | 30.2% | 25.3% | 30.4% |
| 4 | 13.0% | 34.4% | 19.3% | 21.7% | 18.1% | 28.3% | 20.1% |
| 5 | 6.7% | 23.9% | 10.9% | 23.2% | 10.0% | 20.5% | 12.2% |

| | Emotion control | Persist | Criticism | Past Deprive | Disrupted routines | Other's behaviour | Difficult life |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| 1 | 7.9% | 11.2% | 4.8% | 36.4% | 20.2% | 10.6% | 21.5% |
| 2 | 12.7% | 24.3% | 19.0% | 24.7% | 29.3% | 23.0% | 25.4% |
| 3 | 19.6% | 29.2% | 25.7% | 18.2% | 23.9% | 25.8% | 18.4% |
| 4 | 28.7% | 24.0% | 27.8% | 10.2% | 14.8% | 25.8% | 18.4% |
| 5 | 31.1% | 11.2% | 22.7% | 10.5% | 11.8% | 14.8% | 16.3% |

Appendix 21 Revised Frustration-Discomfort Scale: Full scale reliability analysis and correlation with Rosenberg Self-Esteem scale

| | | Corrected item-total correlation | Correlation with self-esteem |
|---|---|---|---|
| Q1 | Painful memories | .49 | -.36 |
| Q2 | Time pressure | .46 | -.33 |
| Q3 | Immediate gratification | .50 | -.20 |
| Q4 | Waiting | .48 | -.10 |
| Q5 | Emotional relief | .58 | -.33 |
| Q6 | Task interest | .51 | -.24 |
| Q7 | Oppositional acts | .64 | -.21 |
| Q8 | Unfair life | .54 | -.26 |
| Q9 | Disorganised | .45 | -.20 |
| Q10 | Craziness | .55 | -.41 |
| Q11 | Ignored | .56 | -.25 |
| Q12 | Potential | .48 | -.14 |
| Q13 | Thoughts | .66 | -.50 |
| Q14 | Easy solutions | .59 | -.36 |
| Q15 | Task obstruction | .62 | -.13 |
| Q16 | Past injustice | .47 | -.09 |
| Q17 | Goal frustration | .50 | -.17 |
| Q18 | Upsetting situations | .65 | -.40 |
| Q19 | Difficult tasks | .53 | -.34 |
| Q20 | Personal standards | .49 | -.21 |
| Q21 | Extra problems | .71 | -.47 |
| Q22 | In the mood | .55 | -.30 |
| Q23 | Understanding | .53 | -.21 |
| Q24 | Unfinished tasks | .51 | -.24 |
| Q25 | Disturbed feelings | .66 | -.59 |
| Q26 | Effort | .61 | -.42 |
| Q27 | Appreciation | .57 | -.21 |
| Q28 | Task perfection | .59 | -.34 |
| Q29 | Time hassle | .50 | -.36 |
| Q30 | Consideration | .54 | -.16 |
| Q31 | Doubts | .54 | -.38 |
| Q32 | Freedom from hassle | .66 | -.39 |
| Q33 | Submission | .62 | -.25 |
| Q34 | Continuing situation | .61 | -.52 |
| Q35 | Work control | .55 | -.24 |
| Q36 | Indulgence | .52 | -.21 |
| Q37 | Disrespect | .50 | -.09 |
| Q38 | Self-discipline | .60 | -.26 |
| Q39 | Morbid thoughts | .57 | -.40 |
| Q40 | Task hassle | .64 | -.36 |
| Q41 | Unfair change | .55 | -.12 |
| Q42 | Waste time | .44 | -.07 |
| Q43 | Emotional control | .58 | -.34 |
| Q44 | Persistence | .63 | -.25 |
| Q45 | Criticism | .53 | -.12 |
| Q46 | Past deprivation | .59 | -.32 |
| Q47 | Disrupted routines | .61 | -.34 |
| Q48 | Other's behaviour | .50 | -.15 |
| Q49 | Difficult life | .66 | -.50 |

Alpha = .958

Appendix 22 'MAP' analysis:
Four-factor Revised Frustration-Discomfort Scale (r > 0.45)

**COMFORT**

| | Corrected item-total correlation | Sub-scale correlation I | II | III | IV |
|---|---|---|---|---|---|
| 2 I can't stand the stress of too many demands on my time | .572 | | | | |
| 6 I can't stand doing tasks that I'm not interested in | .513 | | | | |
| 14 I need the easiest way around problems; I can't stand making a hard time of it | .642 | | .462 | .529 | |
| 19 I can't stand doing tasks that seem too difficult | .669 | | | | |
| 21 I can't bear to experience extra problems | .751 | | .521 | .637 | .505 |
| 22 I can't stand doing tasks when I'm not in the mood | .619 | | | | |
| 26 I can't stand having to push myself at tasks | .715 | | | .510 | |
| 29 I can't stand the hassle of having to do things right now | .636 | | | | |
| 31 I can't bear to make decisions about which I'm uncertain | .549 | | | .458 | |
| 32 I can't stand the slightest hassle in my daily life | .720 | | .493 | .611 | |
| 40 I can't stand doing things that involve a lot of hassle | .771 | | .463 | .535 | |
| 44 I can't stand having to persist at unpleasant tasks | .657 | | .538 | .479 | .457 |
| 47 I can't bear having my familiar routine disrupted | .578 | | .481 | .511 | .493 |
| Alpha .916 | | | | | |

Appendix 22 (continued) 'MAP' analysis:
Four-factor Revised Frustration-Discomfort Scale (r > 0.45)

**ENTITLEMENT**

| | Corrected item-total correlation | Sub-scale correlation I | II | III | IV |
|---|---|---|---|---|---|
| 3 I can't stand having to wait for things I would like now | .533 | | | | |
| 4 I can't stand having to wait when I want to get on with tasks | .494 | | | | .462 |
| 7 I can't stand it if other people act against my wishes | .650 | .510 | | .506 | .475 |
| 8 I can't stand life being so unfair when I have not deserved it | .499 | | | .493 | |
| 11 I can't tolerate being overlooked | .628 | | | | |
| 15 I can't bear it if other people stand in the way of what I want | .680 | .481 | | | .514 |
| 16 I can't bear to have been treated unjustly | .514 | | | | |
| 23 I can't stand being left in the dark with no explanations | .543 | | | .479 | |
| 27 I can't tolerate being taken for granted | .657 | | | | |
| 30 I can't tolerate being treated with a lack of consideration | .636 | | | | |
| 33 I can't stand having to give into other people's demands | .622 | .523 | | | |
| 36 I can't stand giving up immediate pleasures for the sake of a distant goal | .514 | .504 | | | |
| 37 I can't tolerate being treated with disrespect | .640 | | | | |
| 41 I can't stand having to change when others are at fault | .694 | | | | |
| 45 I can't tolerate criticism especially when I know I'm right | .584 | | | | |
| 46 I can't bear being deprived now of things I lacked in the past | .550 | .473 | | .522 | |
| 48 I can't tolerate other people's bad or stupid behaviour | .546 | | | | |
| Alpha .911 | | | | | |

Appendix 22 (continued) 'MAP' analysis:
Four-factor Revised Frustration-Discomfort Scale (r > 0.45)

**EMOTIONAL DISCOMFORT**

| | Corrected item-total correlation | Sub-scale correlation I | II | III | IV |
|---|---|---|---|---|---|
| 1 I can't tolerate painful memories | .572 | | | | |
| 5 I must be free of disturbing feelings as quickly as possible; I can't bear if they continue | .648 | .475 | | | |
| 10 I can't bear to feel that I am losing my mind | .612 | .471 | | | .456 |
| 13 I can't bear to have certain thoughts | .753 | .542 | .500 | | .469 |
| 18 I can't stand situations where I might feel upset | .627 | .599 | .520 | | .459 |
| 25 I can't bear disturbing feelings | .770 | .523 | .500 | | .470 |
| 34 I can't get on with my life, or be happy, if things don't change | .616 | .486 | .520 | | .456 |
| 39 I can't bear sad or morbid thoughts | .705 | .501 | | | |
| 43 I can't stand to lose control of my feelings | .590 | .484 | .456 | | |
| 49 I can't stand life being so difficult for me | .645 | .565 | .548 | | .471 |

Alpha .901

Appendix 22 (continued) 'MAP' analysis:
Four-factor Revised Frustration-Discomfort Scale (r > 0.45)

**ACHIEVEMENT FRUSTRATION**

| | | Sub-scale correlation | | | |
|---|---|---|---|---|---|
| | Corrected item-total correlation | I | II | III | IV |
| 9 I can't stand the frustration of being disorganised | .436 | | | | |
| 12 I can't stand being prevented from achieving my full potential | .588 | | .473 | | |
| 17 I can't bear the frustration of not achieving my goals | .588 | | .479 | | |
| 20 I can't tolerate lowering my standards even when it would be useful to do so | .561 | | | | |
| 24 I can't bear to move on from work I'm not fully satisfied with | .588 | | | | |
| 28 I can't stand doing a job if I'm unable to do it well | .593 | .488 | .474 | .473 | |
| 35 I can't stand feeling that I'm not on top of my work | .621 | | | .455 | |
| 38 I can't tolerate any lapse in my self-discipline | .622 | .455 | .522 | .509 | |
| 42 I can't bear to 'waste' time | .509 | | | | |

Alpha .849

Appendix 23 'MAP' analysis:
Five-factor Revised Frustration-Discomfort Scale (r > 0.45)
Fairness and gratification sub-scales

## GRATIFICATION

| | Corrected item-total correlation | Sub-scale correlation IV |
|---|---|---|
| 3 I can't stand having to wait for things I would like now | .605 | .403 |
| 4 I can't stand having to wait when I want to get on with tasks | .488 | .434 |
| 7 I can't stand it if other people act against my wishes | .627 | .575 |
| 11 I can't tolerate being overlooked | .598 | .561 |
| 15 I can't bear it if other people stand in the way of what I want | .687 | .570 |
| 33 I can't stand having to give into other people's demands | .590 | .554 |
| 36 I can't stand giving up immediate pleasures for the sake of a distant goal | .515 | .426 |
| 46 I can't bear being deprived now of things I lacked in the past | .546 | .461 |
| Alpha .845 | | |

## FAIRNESS

| | Corrected item-total correlation | Sub-scale correlation V |
|---|---|---|
| 8 I can't stand life being so unfair when I have not deserved it | .475 | .452 |
| 16 I can't bear to have been treated unjustly | .514 | .442 |
| 23 I can't stand being left in the dark with no explanations | .541 | .468 |
| 27 I can't tolerate being taken for granted | .686 | .540 |
| 30 I can't tolerate being treated with a lack of consideration | .673 | .514 |
| 37 I can't tolerate being treated with disrespect | .679 | .515 |
| 41 I can't stand having to change when others are at fault | .691 | .599 |
| 45 I can't tolerate criticism especially when I know I'm right | .529 | .552 |
| 48 I can't tolerate other people's bad or stupid behaviour | .530 | .484 |
| Alpha .860 | | |

Appendix 24 Frustration-Discomfort Revised Scale.
Means and standard deviations by gender: Clinical group (N = 254)

| | Male (105) | Female (149) |
|---|---|---|
| Frustration-Discomfort (four-factor) | 88.8 (20.4) | 92.2 (20.9) |
| Comfort | 19.7 (6.1) | 21.0 (6.6) |
| Entitlement | 22.3 (6.4) | 22.0 (6.1) |
| Emotional discomfort | 24.4 (6.4) | 26.5 (6.4) |
| Achievement | 22.5 (5.7) | 22.8 (6.4) |
| | | |
| Frustration-Discomfort (five-factor) | 111.2 (25.4) | 114.6 (25.3) |
| Fairness | 24.6 (6.1) | 24.6 (5.7) |
| Gratification | 20.1 (6.6) | 19.8 (6.7) |

Appendix 25 Frustration-Discomfort Revised Scale.
Normative statistics (four-factor): Clinical group (N = 254)

| | | Comfort | Entitlement | Emotional Discomfort | Achievement | Total |
|---|---|---|---|---|---|---|
| Mean | | 20.43 | 22.09 | 25.60 | 22.67 | 90.79 |
| Std. Deviation | | 6.46 | 6.21 | 6.54 | 6.10 | 20.70 |
| Skewness Z-value | | 0.93 | -0.73 | -4.26 | -0.93 | -1.07 |
| Kurtosis Z-value | | -2.43 | -2.07 | -1.07 | -1.47 | -0.47 |
| Percentiles | 5 | 10 | 12 | 12 | 12 | 55 |
| | 10 | 12 | 13 | 16 | 14 | 63 |
| | 20 | 14 | 17 | 20 | 17 | 73 |
| | 25 | 15 | 18 | 22 | 18 | 77 |
| | 50 | 20 | 23 | 26 | 23 | 91 |
| | 75 | 25 | 27 | 31 | 27 | 106 |
| | 80 | 27 | 27 | 32 | 28 | 110 |
| | 90 | 29 | 30 | 33 | 31 | 118 |
| | 95 | 31 | 32 | 34 | 33 | 124 |

Appendix 26 Frustration-Discomfort Revised Scale.
Normative statistics (five-factor): Clinical group (N = 254)

| | | Fairness | Gratification | Total |
|---|---|---|---|---|
| Mean | | 24.60 | 19.88 | 113.18 |
| Std. Deviation | | 5.88 | 6.30 | 25.33 |
| Skewness Z-value | | -1.50 | 1.37 | -0.98 |
| Kurtosis Z-value | | -1.90 | -2.40 | -1.58 |
| Percentiles | 5 | 14 | 10 | 69 |
| | 10 | 17 | 11 | 78 |
| | 20 | 19 | 14 | 91 |
| | 25 | 20 | 15 | 96 |
| | 50 | 25 | 20 | 113 |
| | 75 | 29 | 25 | 132 |
| | 80 | 29 | 26 | 137 |
| | 90 | 33 | 29 | 147 |
| | 95 | 34 | 30 | 154 |

Appendix 27 Frustration-Discomfort Revised Scale.
Normative statistics (four-factor): Non-clinical group (N = 124)

| | | Comfort | Entitlement | Emotional Discomfort | Achievement | Total |
|---|---|---|---|---|---|---|
| Mean | | 17.63 | 19.52 | 18.49 | 20.70 | 76.35 |
| Std. Deviation | | 4.65 | 4.41 | 5.09 | 5.03 | 15.30 |
| Skewness Z-value | | 1.68 | -0.68 | 0.09 | -0.45 | -1.34 |
| Kurtosis Z-value | | 0.86 | -0.70 | -1.65 | -1.44 | -0.69 |
| Percentiles | 5 | 10 | 11 | 10 | 12 | 49 |
| | 10 | 12 | 14 | 12 | 14 | 55 |
| | 20 | 14 | 16 | 13 | 16 | 65 |
| | 25 | 15 | 16 | 15 | 17 | 66 |
| | 50 | 18 | 20 | 19 | 21 | 77 |
| | 75 | 20 | 23 | 23 | 24 | 89 |
| | 80 | 21 | 23 | 23 | 26 | 91 |
| | 90 | 23 | 25 | 26 | 27 | 95 |
| | 95 | 27 | 26 | 27 | 29 | 100 |

Appendix 28 Frustration-Discomfort Revised Scale.
Normative statistics (five-factor): Non-clinical group (N = 124)

| | | Fairness | Gratification | Total |
|---|---|---|---|---|
| Mean | | 22.14 | 17.35 | 96.31 |
| Std. Deviation | | 4.95 | 4.16 | 18.82 |
| Skewness Z-value | | -1.68 | 0.14 | -1.46 |
| Kurtosis Z-value | | -0.79 | -0.06 | -0.49 |
| Percentiles | 5 | 14 | 10 | 62 |
| | 10 | 16 | 12 | 71 |
| | 20 | 18 | 14 | 81 |
| | 25 | 19 | 15 | 85 |
| | 50 | 22 | 17 | 99 |
| | 75 | 26 | 20 | 111 |
| | 80 | 27 | 21 | 112 |
| | 90 | 28 | 23 | 120 |
| | 95 | 29 | 24 | 124 |